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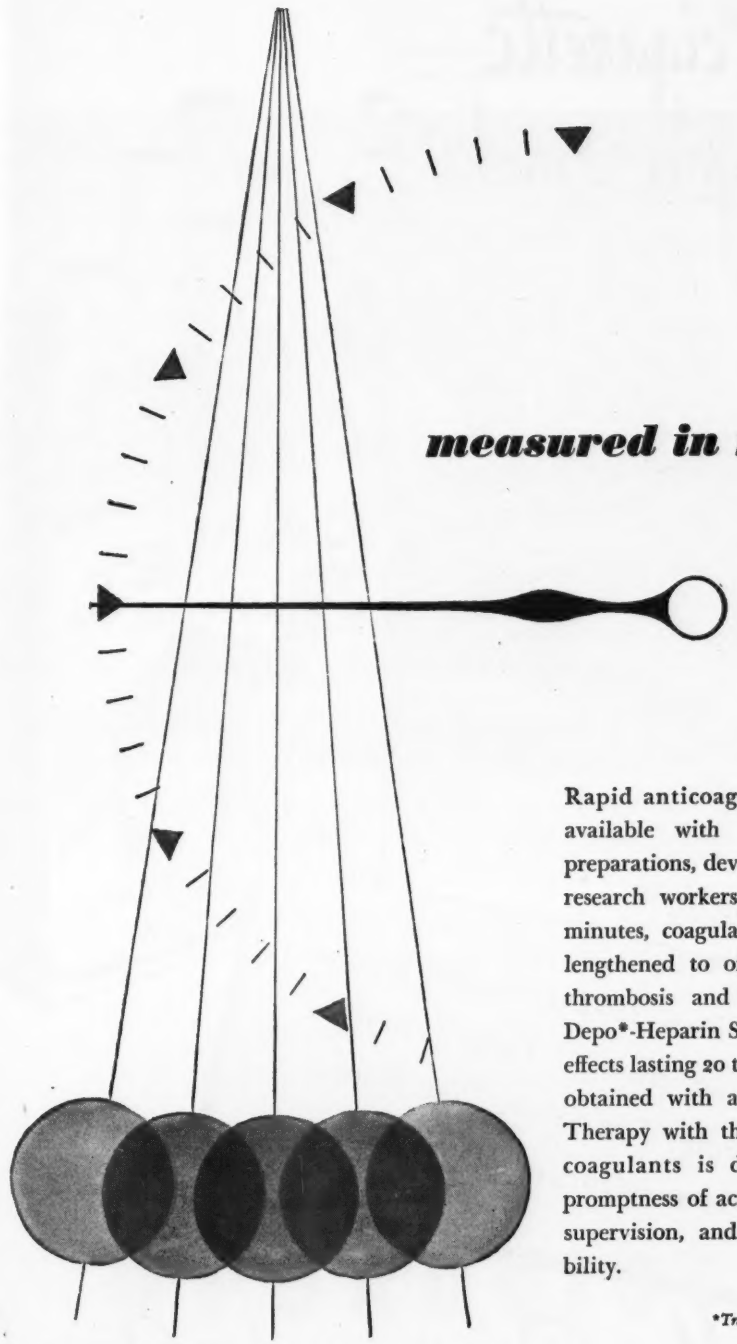

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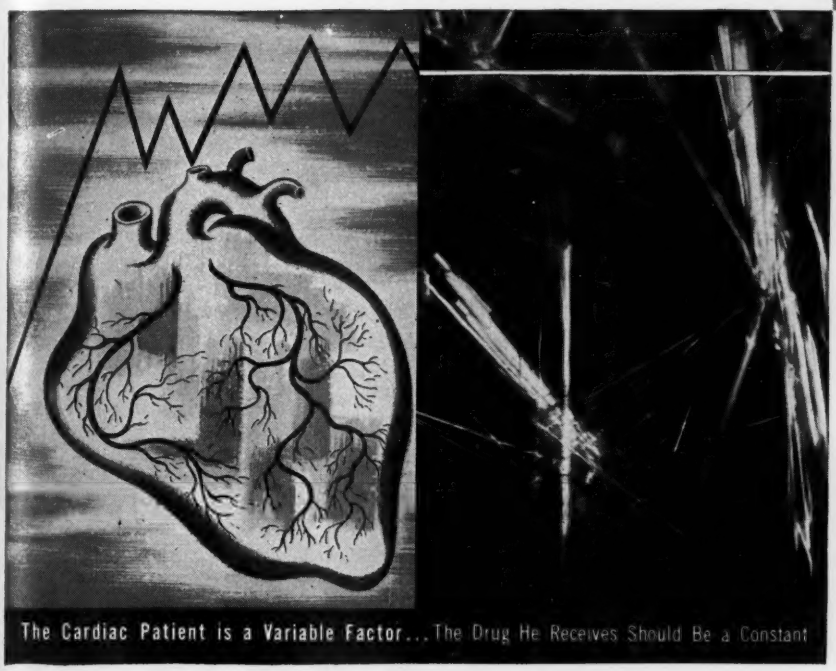

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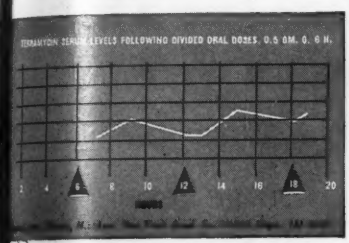

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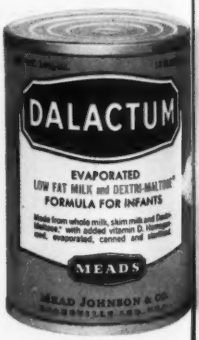

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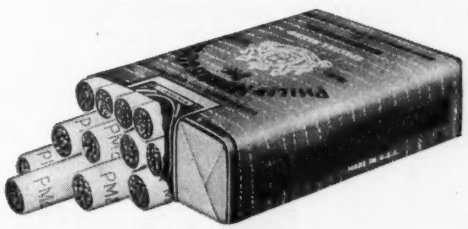

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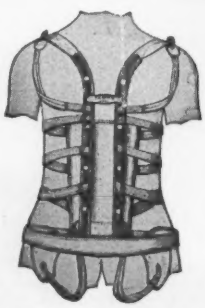

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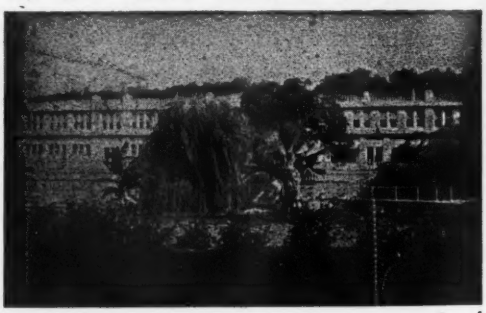

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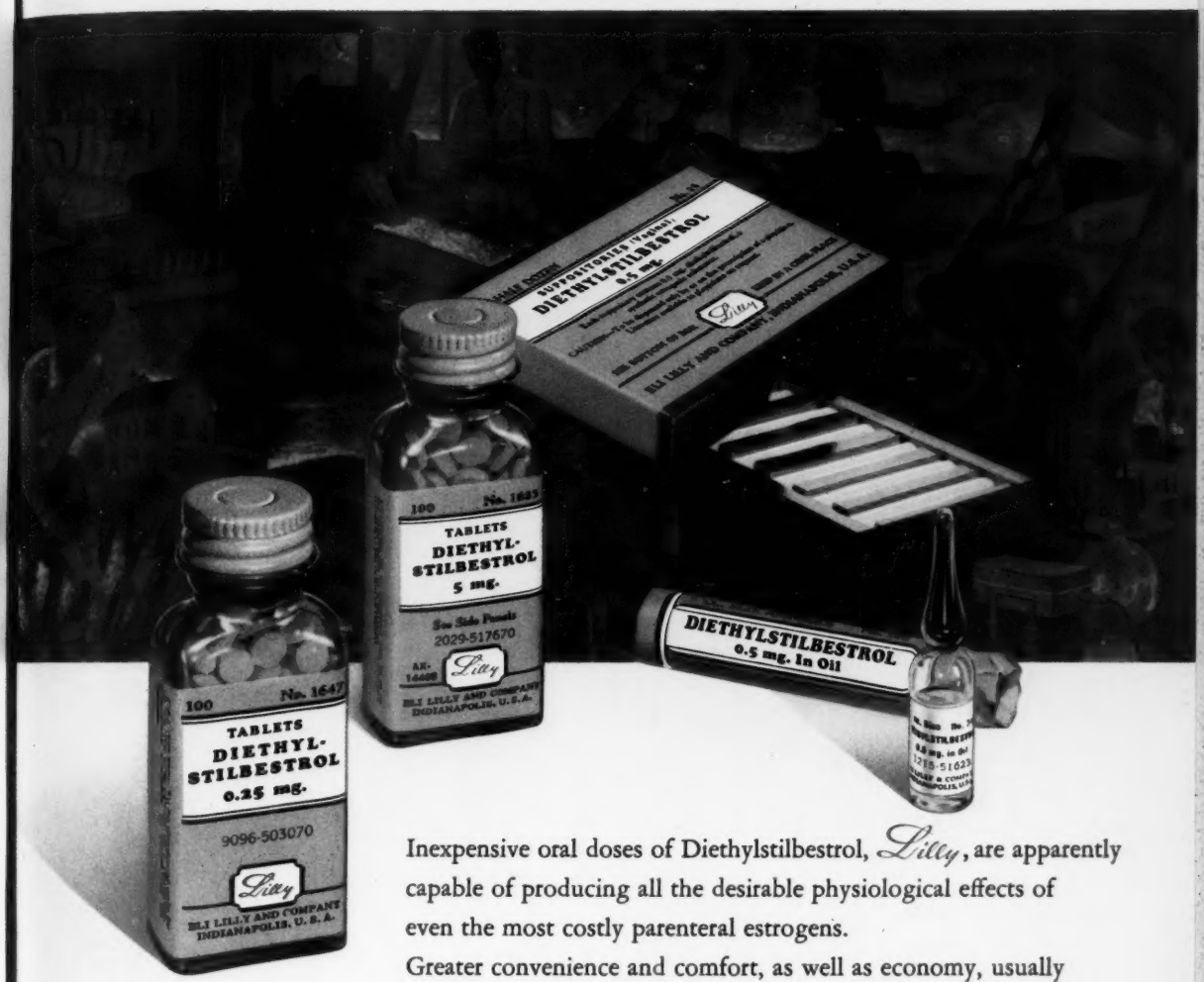

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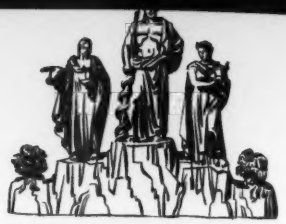

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Bronchial Asthma from a Therapeutic Point of View

John K. Fulton, M.D.
Wichita, Kansas

Bronchial asthma continues to be one of the major chronic illnesses, along with arthritis, pulmonary tuberculosis, and heart disease, which annually cause the loss of thousands of man-days in time lost from school or work, or which are responsible for a state of persistent loss of economic efficiency of the person afflicted. It is important to think of this disease not only in terms of acute attack, but also as a frequently chronic disease in which all measures directed to rehabilitation are justified in terms of the economic benefit to the patient and society.

From time immemorial, numerous remedies have existed for the treatment of bronchial asthma. From the tremendous list of drugs promoted for the treatment of this disease, the actually best or most useful or most effective drugs are few in number. As to specific desensitization, considerable confusion exists in the minds of many physicians as to which types of sensitivity are amenable to desensitization therapy and which are not. Because of the promotion of ill-advised desensitization based on faulty specific diagnosis and attempts at desensitization to antigens which are more practically eliminated, considerable skepticism has arisen in the minds of doctors, as well as patients, as to its actual value in any of those situations where it is indeed really indicated. In the following, the author will attempt to set forth what he believes is the most practical and efficient treatment from the economic, as well as the academic point of view, for each of the various types of bronchial asthma encountered in clinical practice.

Chronic Juvenile Asthma. This type is almost always allergic in origin, due to extrinsic protein sensitivity, with a strong likelihood that the specific etiology, such as foods, danders, mold, house dust, or miscellaneous inhalant can, with patience, be found and eliminated, or that desensitization in the case of house dust or molds will be effective. Paradoxically, identification of the allergens in such cases is easiest when the disease is most severe and chronic. Most difficult are the cases in this group who have asthma associated only with respiratory infections, and whose attacks are so short-lived that a satisfactory elimination program can never be carried out. In the chronic persistent case, the beneficial result of a sweeping elimination of many possible allergens is often dramatic. It is then relatively easy to obtain the cooperation of the patient and his family in running down the final answer.

Seasonal Pollen Asthma in Children and Adults. Too frequently this type is first seen during the height of the pollen season in a person who has had severe hay fever for many years. Reliance has been placed on the various antihistamine drugs in times past. With the growing severity of the allergic sensitization ("those drugs have worn out on me") asthma appears, and the patient and his physician are dismayed that while the nasal symptoms, which often responded quite well to antihistamines in the past may continue to do so, the asthma is not noticeably affected. Or the nasal symptoms may have progressed to the point where even these seem unaffected by the antihistamines. Relief by adrenalin or other drugs is often only a fair compromise. In past times these patients made desperate and expensive pilgrimages to various geographic outlands in an attempt to obtain relief, or remained totally disabled economically for a period of weeks during the pollen season.

When seen for the first time during such a severe seasonal attack, the comfort of the patient as well as his economic situation seems to justify the immediate use of ACTH or cortisone. The results are fortunately often dramatic. In some instances four days of treatment at the height of the season eliminates all symptoms until the next season. Alternative care, such as co-seasonal desensitization, is seldom effective. The drawback inherent in hormonal treatment is of course its temporary effect. It remains to be seen whether ACTH and cortisone will not, like the antihistamines, be a source of dis-

appointment in future seasons, when the underlying sensitization has progressed in severity to the point where such non-specific treatment is no longer effective.

For the long term control of these symptoms, the best treatment, and probably in the long run the most economical, remains the perennial or preseasonal pollen desensitization method. Complete abolition of nasal and asthmatic symptoms by this method is not always possible. Still, the asthma is usually relieved entirely and the nasal symptoms improved to the point that antihistamines are again effective. The patient is thoroughly educated in the nature and care of his disease, and given the prospect of eventual permanent control.

Intrinsic Asthma (Asthmatic Bronchitis; Infectious Asthma). This type of asthma has always been the bugaboo of the physician. While not always severe, its chronicity alone makes it disabling, and with long continued symptoms, pulmonary emphysema and pulmonary fibrosis may permanently cripple the lung so that all therapy is ineffective. It can be identified from the history alone in most instances by the absence of an allergic family history, absence of hay fever, asthma or atopic eczema in youth, and absence of clear cut extrinsic factors in the etiology or periodicity of the symptoms. The patient is usually over 30 and almost always over 40 when his symptoms first begin. He identifies changes in weather, respiratory infections, irritant fumes or dusts, certain drugs, and psychic factors as important precipitating causes of his attacks. Skin tests when properly performed are usually negative. Elimination regimes prove to be of no value except insofar as respiratory tract irritants are reduced.

This patient has a number of favored remedies. Ofttimes heavily addicted to adrenalin, he has narrowed down his therapeutic regimen to stoical acceptance of his disease plus the use of symptomatic remedies. While these drugs make life bearable, the symptoms persist and the secondary lung disease persists. Eventually this patient may become permanently disabled by the crippling effects of his asthma or may go into the inexplicable remissions which occasionally occur.

This patient promises more than any other to profit by the use of ACTH and cortisone, given in an individualized fashion, with the intent not only of relieving symptoms but of preventing further lung damage. Some such patients are best controlled on intermittent courses of high dosage. Others do best on smaller maintenance doses. The physician has the responsibility not only to relieve the presenting attack but to insure that so far as possible the disease is suppressed at an innocuous level. Should the patient balk at the cost of the drug, it should be pointed out to him that time lost from employment or reduced efficiency in employment costs more than the drug itself.

A word more about desensitization. Enthusiasm for this method of treatment reached its heyday in the aftermath of the period when immunotherapy was making such rapid advances. It would appear now that there has developed among many physicians, as well as laymen, a certain skepticism toward the value of "shots" in hay fever and asthma. The reason for this is no doubt the equivocal results which have followed desensitization programs not carefully suited to the problem at hand and without proper understanding by the physician of the limitations of this type of therapy.

While desensitization has been attempted to almost every known allergen, those which are best suited to this management are relatively few in number. These are practically limited to the seasonal pollens, the molds, and house dust. Desensitization to feathers and animal danders is usually ineffective as well as unnecessary. Desensitization to house dust as the only therapeutic attack on dust sensitivity is seldom helpful. On the other hand, undue importance attached to a weak reaction to house dust resulting in a long desensitization program has often been a source of disappointment, because the house dust was not the significant allergen responsible in the beginning. Desensitization to foods is now seldom used.

In Kansas, the seasonal pollens of clinical importance are; 1. the grasses, 2. the chenopod-amaranths; Russian thistle, pigweed, Kochia, 3. the ragweeds, 4. the sages, and 5. the trees. Except for the latter, these antigens are quite antigenically similar within each group, for which reason skin tests for significance tend to be positive to all other pollens within that group. Where skin tests do not clearly show group as well as single pollen sensitivities, the probability is very great that: 1. the test is in error, or 2. the clinical sensitivity of the patient is insufficient to account for the symptoms.

Furthermore, positive skin tests, even when convincing by the above criterion, are not alone an indication for inclusion of that antigen in the treatment mixture unless the clinical history indicates significant clinical sensitivity, for the addition of unnecessary antigens to the mixture simply reduces the patient's overall tolerance to other more significant antigens in the prescription.

To summarize, desensitization should be: 1. limited to those antigens where experience has shown that this is both effective and safe, and 2. limited only to those antigens to which the patient is clin-

ically sensitive as borne out by both history and valid skin tests.

Where symptomatic treatment alone is indicated, the following drugs are the old reliables. The drug houses notwithstanding, there have been few important additions in 25 years.

Useful drugs:

1. Adrenalin:
   But addicting by self administration.
2. Aminophylline:
   Intravenously and in adequate dosage. A safe drug in the asthmatic patient.
   Rectally as suppositories or infusions.
   Orally—benefit is never striking.
3. Iodides:
   The most neglected of the useful asthma medicaments. Should be given from the onset of all respiratory infections in asthmatic patients.
4. Isuprel: (Aludrine; Norisodrine)
   Sublingually a convenient, rapidly effective remedy for milder attacks.
   By aerosol, with the same precautions as for adrenalin
5. Ephedrine:
   In combination with sedatives
6. Sedative:
   Chloral hydrate and paraldehydrate seldom sensitize.
   Barbiturates usually safe.
   Opiates never indicated and decidedly dangerous.
7. Antibiotics:
   Where infection is superimposed on and adds to the mucous membrane edema and exudation.

Drugs and Treatments which are Not Reliable or Useful:

1. Antihistamines:
   Effective in hay fever. They are usually not effective in asthma, and may promote formation of mucus plugs through their drying effect on the bronchial mucosa.
2. Orthoxine:
   A weak ephedrine clinically.
3. Calcium:
   Its oral use is not based on reliable evidence that the blood calcium can be altered by this route, nor that asthma is in any way related to disturbed calcium metabolism. Intravenously its effect is evanescent.
4. Vitamin C:
   No reliable evidence for value.
5. Thyroid or other hormones other than ACTH and cortisone.
6. Irradiation of the lungs with x-ray:
   Only temporary in its benefit and possibly hastens the fibrotic changes in the lungs which normally result from the disease itself.
7. Pulmonary sympathectomy:
   Not a permanent or generally accepted cure at the present time.
8. Psychotherapy:
   Not at the present time a practical or soundly based primary approach to the problem.

Conclusion

1. Indications for the various modes of treatment for hay fever and bronchial asthma are outlined in terms of the various clinical types of these diseases and the stage at which they are encountered.

2. The treatment selected should be based on economic as well as theoretic considerations, with the object in mind being to choose the approach which will result in the best long, as well as short, term adjustment of the patient to his disease.

3. The cost of any treatment of these diseases, particularly bronchial asthma, should be weighed against the cost of the disease itself. In the case of hay fever, due attention should be paid to the fact that it is so frequently a forerunner of bronchial asthma.

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Encephalitis in the Midwest: I. A Review of the Problem*

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Introduction

Large epidemics of encephalitis in horse and man have occurred in the states of the Missouri River Basin. Major epidemics of St. Louis encephalitis occurred in 1933 and 1937 in the city and county of St. Louis, Missouri, and of western equine encephalomyelitis in 1941 in North and South Dakota, Minnesota, and Nebraska. The equine epizootics (such as the "Kansas-Nebraska horse plague" in 1912 and those of 1937 and 1938, affecting the whole midwest) involved vast numbers of animals.

In 1948 studies on the encephalitis problem in the midwest were begun by the Encephalitis Investigations Unit of the Office of Midwestern Communicable Disease Center Services, Kansas City, Kansas. The objective of these studies is the clarification of the epidemiologies of the arthropod-borne virus encephalitides in the hope that when the means of maintenance and transmission of the viruses in nature are known, some practical means of dealing with them may be found. The study area consists of the ten states of Kansas, Iowa, Missouri, Minnesota, Montana, Nebraska, North Dakota, South Dakota, Colorado, and Wyoming.

Infections Present In the Area

Of the virus diseases termed the arthropod-borne encephalitides, only those of western equine encephalomyelitis and St. Louis encephalitis have been reported from this area. Other viruses present which are capable of producing the symptoms of encephalitis in man include lymphocytic choriomeningitis, poliomyelitis, herpes, and mumps. Clinically the diagnosis of encephalitis is very difficult, and indeed the naming of the specific infections cannot be made without complicated laboratory tests undertaken either to isolate the causal virus or to demonstrate a rising titre of antibodies.

Figure 1 shows the number of reported cases of "acute infectious encephalitis" in the 10-state area since 1933, together with that of the equine cases of encephalomyelitis since 1935. The major portion of the human cases which occurred in 1933 and 1937 were due to epidemics of St. Louis encephalitis which occurred mainly in Missouri; those of 1941 were due to the western equine encephalomyelitis in the northern states of the area.

St. Louis Encephalitis

Before the isolation of the causal virus in 1933, St. Louis encephalitis was not specifically recognized. In 1933 encephalitis appeared in epidemic form in and around St. Louis with smaller foci in Kansas City, St. Joseph and Columbia, Missouri, as well as in Illinois and Kentucky. The epidemic was investigated by a commission[1] and the causal virus was quickly isolated. An outbreak in 1932 in Paris, Illinois, was recognized in retrospect.

Hartmann[1] reviewed the cases of all central nervous system infections admitted to the Children's Hospital at St. Louis for the years 1915-1933, and found 40 of them to be clinically indistinguishable from St. Louis encephalitis. He concluded that the disease was endemic in the city long before the 1933 epidemic appeared.

According to Broun et al[2] little, if any, summer encephalitis was evident in the St. Louis area in the years 1934-1936.

In 1937 an epidemic occurred in the St. Louis area. This epidemic was not reported fully, but according to Broun et al[2] St. Louis virus was recovered from one case. Blattner and Heys[3] have stated that there was a total of 750 cases; records of the City Health Department give details of 450 cases in the city. The epidemic began about the middle of August, reached a peak in the middle of September, and faded out in October.

In 1938 Smith, Lennette, and Blattner[4] reported 10 cases of acute encephalitis from St. Louis. All the cases were examined serologically; however,

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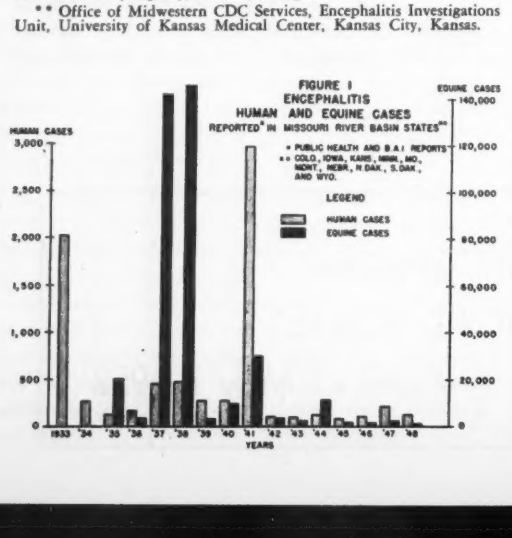


none of them showed specific antibodies to the St. Louis virus.

No large scale epidemic of St. Louis encephalitis has occurred since 1937, but every year clinically diagnosed cases are discovered in the environs of St. Louis. From 1939 to 1944, 66 cases were reported from the St. Louis Children's Hospital by Blattner and Heys.[3] Twelve of these were shown by antibody tests to be due to St. Louis virus.

In 1943-1944 Smith et al[5] carried out a serum survey for evidence of infection with St. Louis virus, using the neutralization test. Of 97 people who had been residents in St. Louis County through the epidemic years, 1933-1937, 37 per cent showed antibodies against St. Louis virus. In some sections of the country the serum of approximately 50 per cent of the residents contained antibodies against St. Louis virus. On the other hand, of 56 who had come to this country after 1937, only three showed antibodies.

Since 1944, according to Hartmann,[6] physicians in the Children's Hospital in St. Louis have made clinical diagnoses of small numbers of encephalitis cases each year from residents of both the city and the county.

Apart from the 1937 epidemic, St. Louis encephalitis has been rarely reported in the midwest outside of the city and county of St. Louis. Human infection with this virus is undoubtedly much more widespread than reports indicate because antibody against the virus is being found in widely scattered localities in the area. Reports of these include Minnesota by Eklund,[13] and in Colorado by Philip, Cox, and Fountain.[10]

Western Equine Encephalomyelitis

In 1937 and 1938 a number of human infections of the western equine encephalomyelitis virus were diagnosed by antibody tests in Minnesota by Eklund and Blumstein,[7, 8] and in North Dakota in 1938 by Breslich, Rowe, and Lehman.[9] Two years later in Colorado, Philip, Cox, and Fountain[10] showed the presence of antibodies against this virus and also found[11] a focus of encephalitis of an unidentified type in Larimer and Weld Counties.

The virus was isolated in Kansas in 1940 from the bloodsucking conenosed bug *Triatoma sanguisuga* by Kitselman and Grundman.[12]

In 1941 the largest human epidemic of western equine virus to date occurred, nearly 3,000 cases being reported, chiefly from North and South Dakota and Minnesota. Eklund[13] reported that 46 per cent of 857 cases investigated in Minnesota had antibodies to the virus in their sera; a small percentage were found to have antibodies to the St. Louis virus. Furthermore, he indicated that the disease was primarily a rural one. During the epidemic, virus was recovered in North Dakota from a prairie chicken and a deer by Cox et al[14] and in Iowa from a hog by McNutt and Packer.[15] The horse population also was involved and, as in some other epidemics, it was noted that the horse epizootic preceded the human one.

In 1943 in the course of investigations by Hammon, Reeves, and Galindo in eastern Nebraska,[16] over 10,000 mosquitoes and 1,200 bedbugs were tested for neurotropic viruses, and western equine encephalomyelitis virus was isolated from one pool of 67 *Culex tarsalis* mosquitoes out of a total of 631 caught. No positive human cases were found and it would appear that infection in humans and animals in eastern Nebraska in 1943 was minimal.

Investigations of small outbreaks of unspecified encephalitis were made in eastern Kansas in 1946-1947 by Wenner,[17] who was unable to establish a specific diagnosis.

Since 1941 no large scale epidemics have been reported, although localized outbreaks occur every year in one or more areas of the Missour River Basin states. Such outbreaks were investigated in Garden City, Kansas, in 1948 and in North Dakota and Colorado in 1949. These will be reported in subsequent papers.

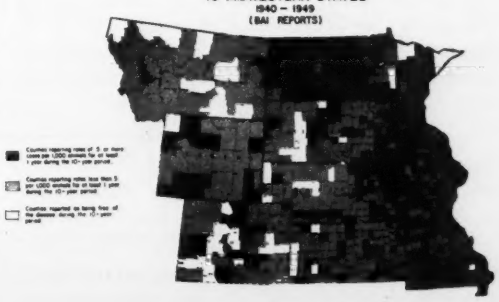
Equine Infections

There are numerous reports by veterinary scientists dating from about 1850, referred to by Meyer[18] and the Botulism Commission,[19] which indicate that many extensive epizootics occurred during the latter part of the 19th century and periodically during the early years of the 20th century. The severity of these early epizootics is emphasized in reports describing such losses as 35,000 equines in Kansas and Nebraska in 1912; 1,000 in Colorado in 1919; 18 outbreaks involving 1,004 animals in Montana in 1919, and 1,500 in South Dakota in 1918.

The number of horse cases reported for the 10-

FIGURE 2

EQUINE ENCEPHALOMYELITIS
IN
10 MIDWESTERN STATES
1940 – 1949
(BAI REPORTS)



state area per year has steadily dropped since the severe epizootic of 1937 and 1938 (Figure 1). This can be partially accounted for by the reduction in the horse population from about 3.9 million in 1933 to about 1.2 million in 1949, and by the large numbers of horses immunized against western equine virus following the epizootics of 1937 and 1938. Although there has been a reduction in the total number of reported equine infections since 1937, western equine encephalitis virus is still prevalent in the midwest. Rates of equine infections during the period 1940-1949 are indicated on Figure 2.

In 1933 Willett[1] produced evidence that the mule might be susceptible to St. Louis virus; this was confirmed in 1940 by Cox, Philip and Kilpatrick.[20] Philip, Cox, and Fountain[10] working in Weld County, Colorado, found that of 14 horses with symptoms, seven had St. Louis antibodies and only two had western equine antibodies.

Discussion

The virus encephalitides are endemic in states of the Missouri River Basin. Sizable epidemics due to both the western equine and St. Louis viruses have occurred and local outbreaks and sporadic cases occur annually in widely scattered parts of the basin.

From the point of view of both the practicing physician and the research worker, the infections grouped under the title of encephalitis present many unsatisfactory features. Clinical diagnosis is extremely difficult, and these infections are confused with many other diseases, especially poliomyelitis, lymphocytic choriomeningitis, and cerebral vascular disorders. In addition, few laboratories in the midwest are equipped to perform diagnostic work on encephalitis, and those that have the facilities for such work are not prepared to test specimen material on a routine basis. Although laboratory tests are the best available means of diagnosing specific encephalitic diseases, they are far from satisfactory. A significant percentage of cases exhibiting encephalitic symptoms fail to respond to known tests.

There is no specific treatment, any medication being for symptomatic relief only, so that the handling of a patient is largely a matter of careful nursing. The death rate in epidemics of western equine encephalomyelitis and St. Louis encephalitis appears to be between five per cent and 20 per cent and a number of the patients who survive have residual paralyses or personality changes. There is no satisfactory method of prevention of infection, although preventive inoculation is available for people exposed to undue risk, and anti-mosquito precautions are advisable under certain circumstances.

Summary

1. Two of the arthropod-borne virus encephalitides, western equine encephalomyelitis and St. Louis encephalitis, are endemic in the midwest, and have occurred in the past in epidemic form. Both humans and equines have been affected.

2. Encephalitic diseases are very difficult to diagnose and laboratory assistance in this is inadequate in the midwest.

3. The Encephalitis Investigations Unit of the Office of Midwestern CDC Services is engaged in long-term investigations into the epidemiologies of these viruses in the hope of discovering some practical method of control.

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The Handling of Casualties*

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Washington, D. C.

No civil defense function presents more potential personal concern than the handling of casualties. Damaged or lost property generally can be replaced or else forgotten heroically, but far more demoralizing would be death, physical suffering, personal misery, and grief caused by loved ones' injury, or their undetermined whereabouts or condition. Although individual concern in such instances is of vital importance to the nation, it must not be confused with those problems of national survival related to our methods of handling casualties.

Regardless of our individual sympathies and emotions, modern war is calculated, cold realism and may result in utter disregard for dignity of the individual. Hence efforts at destruction or survival might submerge the rights of individuals. On the other hand a temporary loss of individual right in favor of national survival efforts might enhance the future of free citizens. As an example the successful handling of a maximum number of civilian casualties rather than ideal treatment of individuals may tip the balance over towards maximum chances of survival. This has been confirmed by military medical experience which has proved that nothing enhances the will to fight, or to survive to return to the fight, like prompt, adequate treatment for the largest number of casualties. This objective of civil defense fits into a necessary goal of national manpower maintenance.

A few changes in existing medical systems required to handle peacetime casualties could consist of improving preventive efforts, compliance with reasonable and known rules of safety, accident prevention techniques, and increased efficiency in management of medical resources. On the other hand, war-produced casualties would necessitate many changes in our usual, peacetime existence. For one thing the qualitative aspect or skill of our manpower must be enhanced, or reestablished where damaged, even more so than quantitatively. Our emergency medical services would have to increase their own qualitative manpower factors while releasing quantity to the armed services and other approved demands.

One more evidence of the significance of casualties may be found in a recent interesting statement that no more than four to six per cent of a total population can be lost if a nation is to survive unconquered.[1] However this data may have neglected the fact that past casualties belonged more to military segments of populations than to civilians under attack. No one knows the maximum quantitative or qualitative tolerance of civilian casualties.

Our potential civil defense casualty problems are established geographically. More than half our population is concentrated in 168 "metropolitan areas" (an area is based upon one city of 50,000 or more people), where four-fifths of our population increase during the last 10 years occurred at a rate of 21.2 per cent, as compared with 5.7 per cent for the rest of the country. One metropolitan area, New York City, has more people than all of New England or any one of 45 states, while there are 15 states with fewer than a million each. There are 90 areas with 200,000 or more, a likely minimum critical target area for atomic bombs,[3] and 150 with 100,000 or more. It would be unusual for smaller communities to be attacked. Hence we may consider that no more than 150 cities, probably fewer, would be reasonable target areas. Other designated critical target areas are "industrial-metropolitan areas," the most profitable targets for an aggressor,[4] usually having 40,000, and "industrial areas" with 20,000 or more industrial workers each. The metropolitan areas contain most of our medical resources.

Future wars will be won by the producing population. Hence the mission must be health conservation rather than therapeutic medicine. A realistic nation would be compelled to give priority for health services, in order of importance to its survival, to the on-duty industrial-agricultural population, the rest of the nonsick, and then to casualties. However, the casualties likely would include many industrial workers, who would have to be rehabilitated and returned to work promptly.

All communities are not likely targets, hence the missions of various communities differ as greatly as their hazards. For example, a recognized authority stated [5]:

"I should like to emphasize my own personal view on the importance of keeping a proper perspective in civil defense activities. The atom bomb has added a new factor to be reckoned with in modern warfare, but it is not sound thinking to over-emphasize the role atomic energy will play

* Prepared by Colonel Wilson, Special Assistant to The Surgeon General, for use in discussions at Symposium on Public Health in Civil Defense, sponsored by the University of Kansas Departments of Public Health and Preventive Medicine and Postgraduate Medical Education, the Kansas Medical Society, and the Kansas State Board of Health, at the University of Kansas Medical Center, Kansas City, Kansas, February 12, 1951.

in any future war to the exclusion of planning for emergency medical support against conventional block busters and fire bombs or such unconventional forms of warfare as bacteriological and poison gas."

All cities need not prepare scientifically for atomic bombing, high explosives, incendiaries, guided missiles, or chemicals directed against them. But every metropolitan area must know what to do or not do. The efficiency and economy of a casualty-handling service will depend upon a proper balancing of application of knowledge and means to the military planner's quintuplets of "what, when, where, who and how." Since success in each of these five planning fields is so essential to the welfare of a future individual casualty, we must examine them.

There are three "whats," the first of which is a question as to what types of services are involved. There is the matter of maintenance of war production by means of essential health services for war-industrial workers[6] and for the sick of the rest of the noncasualty population, the latter comprising usually about two per cent of the people. There must be an immediate response by any attacked community or communities in the form of self-help,[7, 9] and aid to other communities by those which may have been not attacked. This would be achieved by sending medical teams and supplies,[10] receiving and caring for casualties from another community, or receiving and caring for mass-evacuated populations with or without casualties.[11]

A second question of "what" comprises the types of living casualties to be expected. Far too much attention has been expended on the dead, awesome as past experiences may have been in this matter. Living casualties would comprise the usual community casualties due to injuries which would occur during war as well as in peacetime. The other casualties would be the war-produced civilian casualties, of traumatic, thermal, radiation, chemical, infectious or mental origin, varying quantitatively according to

Population densities
Prevailing construction
Education and mental capacities of the population
Intensity and force of attacks
Time of attacks
Spread of attacks in duration and in space
Behavior of the population and its leadership.

The last "what" has to do with types of activities necessary to a casualties service, among which would be:

1. Organizational, for development, equipping, training, testing, assigning and managing the component elements.

2. Providing transport where and when required for casualty service personnel, casualties and medical supplies.

3. Providing means of medical service communications.

4. Assuring adequate nonmedical means essential to medical services and the care of casualties but not controlled by the medical services and not their responsibility except for advice to proper authorities as to quality and quantity required, and where and when.

5. Management, where and when required, over the following:

The flow of casualties, services, and supplies, by means of a medical regulating service.

Treatment of the casualties by finding, rescuing, collecting, sorting, transporting, and hospitalizing them.

Preparation and Maintenance of Applicable Records and Reports

The "when" cannot be foretold in peacetime, nature and fate being credited by many for determining the times for casualty production, perhaps unjustly at times. An enemy would select the "when" for producing war casualties in our communities. Factors, of interest to individuals, which might influence an enemy would be the time of day, day of the week, and season. Of interest to nations would be advantages accruing to an enemy-aggressor from political, psychological, and economic or industrial viewpoints, while some disadvantages to a nation attacked would be high population density, climatic hazards, psychological states at the time of attack.

The "where" factor could involve neighboring nations as well as our own. An enemy would determine not only this but also the specific local communities selected for attack. The community attacked would need to determine where casualties were to be handled, and would determine the organization of zones of activity.

"Who" will be casualties can be influenced very markedly by enemy activities as well as our own. Applicable to the former would be the time of attack, extent of warning period, nature and force of attack, while to the latter would be the status of prior administrative and passive defense arrangements achieved, and attitudes and behavior of our own population. Who will handle the casualties which would occur despite our best efforts prior to attack, and who will manage the planning and functioning of the organization constitute a large part of the remainder of this discussion, the "how."

The outstanding major objective of "how" to handle civilian casualties must be to provide medical

aid at the earliest possible moment after injury. Well-known success has been achieved in military medical services by advancing immediate medical aid ever closer to the place and time where the individual soldier may be injured, at the front, the incident area. As progress has occurred, the hazards and risks assumed by the medical service personnel have increased, but have resulted in no withdrawal or a deployment anywhere save in the areas expected to contain the maximum numbers and degrees of injuries. Equal success in civil defense medical services can be achieved only by accepting, then minimizing to the maximum possible degree, the risks taken by the civil defense casualties service personnel to equal those of the rest of the population. Importation of initial medical aid from the rear to the combat front only after casualty incidence would not achieve necessary military medical results. Unless more deaths and increased extent and time of suffering on the part of civilian casualties are to be tolerated, we will be equally unable to deploy comparable civil defense casualty service personnel in "safe" or peripheral areas only. The injured population will benefit by furnishing maximum protection to medical personnel in potential incident areas, hence the latter must be on the ground and ready to function. The risks must be minimized by increased passive defense measures, particularly reinforcement by construction, for medical aid stations, supply and personnel rendezvous points, and surgical and other hospital facilities required within a very few minutes after casualty incidence.

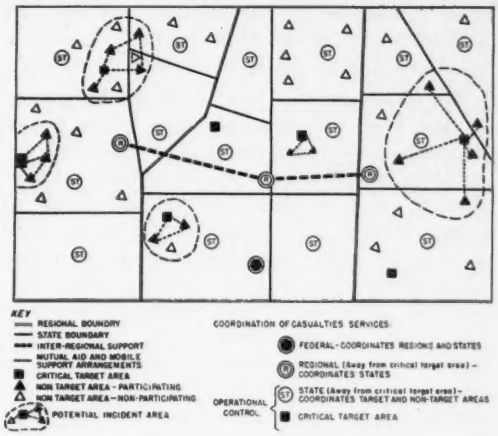
KEY
REGIONAL BOUNDRY
STATE BOUNDARY
INTER-REGIONAL SUPPORT
MUTUAL AID AND MOBILE SUPPORT ARRANGEMENTS
CRITICAL TARGET AREA
NON TARGET AREA - PARTICIPATING
NON TARGET AREA - NON-PARTICIPATING
POTENTIAL INCIDENT AREA
COORDINATION OF CASUALTIES SERVICES
FEDERAL - COORDINATES REGIONS AND STATES
REGIONAL (Away from critical target area) - COORDINATES STATES
STATE (Away from critical target area) - COORDINATES TARGET AND NON-TARGET AREAS
CRITICAL TARGET AREA
OPERATIONAL CONTROL

Figure 1. Organization for Handling Casualties Services.

Just as essential an objective in our "how" is uniformity of organization. Economy of means and efficiency of operation will depend upon early and maximum achievement of uniformity for all self-help, for mutual aid and mobile support teams, for controls, communications, and for the procedures of each. Defining the basis is a central responsibility, implementing the organization is a decentralized, local responsibility.

Similarly, a third objective must be an early standardization of material means, along with maxi-

SERVICES REQUIRED AND AREAS			CONTINUOUSLY REQUIRED ESSENTIAL HEALTH SERVICES		PERIODICALLY REQUIRED CIVILIAN CASUALTY MEDICAL SERVICES		
			FOR INDUSTRIAL POPULATION IN WAR PRODUCTION	FOR REST OF POPULATION (NON-CASUALTY)	SELF-HELP	MUTUAL AID	MOBILE SUPPORT
SOME ATTACKED	CRITICAL TARGET AREAS		2	3	1	4	5
	NON TARGET AREAS	PARTICIPATING	1	5	4	3	2
		NON-PARTICIPATING	1	2	–	–	–
UNTIL SOME ATTACKED	CRITICAL TARGET AREAS		1	3	–	4	2
	NON TARGET AREAS	PARTICIPATING	1	2	5	3	4
		NON-PARTICIPATING	1	2	–	–	–

Table 1. Usual Priorities—Civilian Medical Services To Be Assured for War. Priority diminishes with increasing numerals.

mum curtailment of the numbers and types of medical items involved in handling casualties. Standardization should be developed nationally.

The fourth essential "how" is specific designation in clear, brief, understandable terms, of the role of the state, of the community and of individuals for self-help, mutual aid, and mobile support. All individuals must be taught self-help and almost all except children must learn first-aid measures to provide for basic immediate care of casualties. Unless advised by competent authority to do otherwise all metropolitan areas should develop self-help, mutual aid, and mobile support teams. Some communities would provide self-help alone. A few communities might be directed to prepare for mobile support only. Many communities need to be advised soundly that they will have no active participation in the handling of casualties.

The last but extremely important "how" to be listed is the provision of means. Another common military planning formula may contribute to orderly thinking here, namely, the five M's of money, manpower, material, mobility, and management. Even if control over these is lacking an academic consideration of their application may be undertaken in an advisory manner. It goes without saying that practical limitations might influence competent civil authorities to vary considerably from our academic concepts presented here. Full individual and community support to them in such instances would be urged by no one more completely than by me.

Communities should determine their probable responsibilities before time-phasing efforts to develop their medical services for war (Figure 1), priorities for which would fit into a typical pattern (Table 1). Where casualties services will be required their relationships with other services essential to community conservation of health must be understood (Figure 2). In order to develop self-selp, one must understand the detailed planning and implementation required.[8] This holds true also for mutual aid and mobile support.[10] This is not the place or time to review such matters in detail. These have been discussed broadly in recent official documents.[12,13]

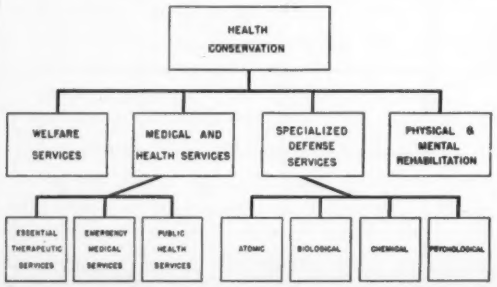

Figure 2. Services required for Handling Civilian Casualties in Civil Defense.

What might result from the matters discussed so far? A metropolitan organization would be extremely complex, but understanding would come rapidly as the component elements were isolated, studied in detail, then their interrelationships learned (Figure 3). Although the whole system is based upon the hospital services, the maximum achievements will depend for the most part upon success or failure of the casualties services.

The aid station is the nerve center of the casualties services, the vital point where life-saving measures and initial prevention or reduction of suffering will occur. It is also the controller of activities designed to prevent, reduce, or alleviate shock, pain, infections, hemorrhages, and acute mental disturbances. Since it is so important the aid station must be well protected from damaging attacks by an enemy, even to a maximum degree, ready accessibility and entry and exit must be assured, and adequate staffing and equipment guaranteed. No doubt design for a modern standardized aid station will be developed soon. Meantime, except for revision to provide for increased difficulties, magnitudes, and hazards anticipated from atomic bombing, the functional design of World War II aid stations of acceptable type furnish us examples for study. The extensive problems of maintaining flow of casualties, detecting and handling contaminated casualties while treating them, as well as uncontaminated ones, prior to their disposition can be barely suggested here. These might be simplified by adopting a standard operating procedure, discussed here as an introduction to some functions of the aid station.

The aid station should:

1. Direct and supervise aid groups in their operations of finding, rapidly furnishing first aid to, collecting and moving, living casualties on to further treatment at aid stations or hospitals, or if necessary, directing them home or to duties.

2. Direct and supervise attached motor ambulance groups in their operations of casualty transport, to the station and to hospitals.

3. Maintain medical supply support of all assigned missions.

4. Coordinate medical services with skilled rescue groups' services.

5. Operate a collecting and clearing station for interim life-saving measures and transfer of casualties for further treatment as necessary. This is achieved by:

Reception of casualties by ambulation or from aid groups and motor ambulance groups.

Sorting of casualties according to nature and severity of injuries.

Classifying casualties under medical regulating system categories.

Supervising the decontamination of casualties who also would require treatment.

Administering treatment to save lives or reduce excessive suffering.

Preparing, maintaining, and transmitting appropriate records and reports.

Disposing of casualties to duty, home, convalescence, hospital, morgue, asylums, prisons, or homes for incurables, as prescribed by medical regulator.

In a general way actions would always be taken in approximately the same order for successive incidence. We should recall that the Chief of the Collecting Post Group directs activities of the Aid Station and Aid Groups as well as attached Ambulance and Decontamination Groups involved in the casualty treatments (Figure 3). Upon occurrence of an incident he should first make an immediate estimate of his over-all problem in the area for which his group is responsible. This is one of the most important points for all to learn, in order that the personnel will not rush into unplanned and unwise attending of a few casualties to the disadvantage of the whole population affected. He will learn the likely numbers and disposition of casualties in general, imparting the information to his aid personnel and litter bearers. Coordinated action with skilled rescue groups will be valuable in this phase of action, as will information which should come to him rapidly also from police, fire, and other service sources, as well as from citizens. The deployment, availability and extent of undamaged services will be determined. With this in mind after a relatively small loss of time, the performance may start.

The next important activity will be tagging of patients to identify them, their origin, and the nature broadly of injuries sustained. This is extremely important because it will make or break the medical records and the reporting system.

SUGGESTED METROPOLITAN ORGANIZATION FOR CIVIL DEFENSE HANDLING OF CASUALTIES

(SCHEMATIC)

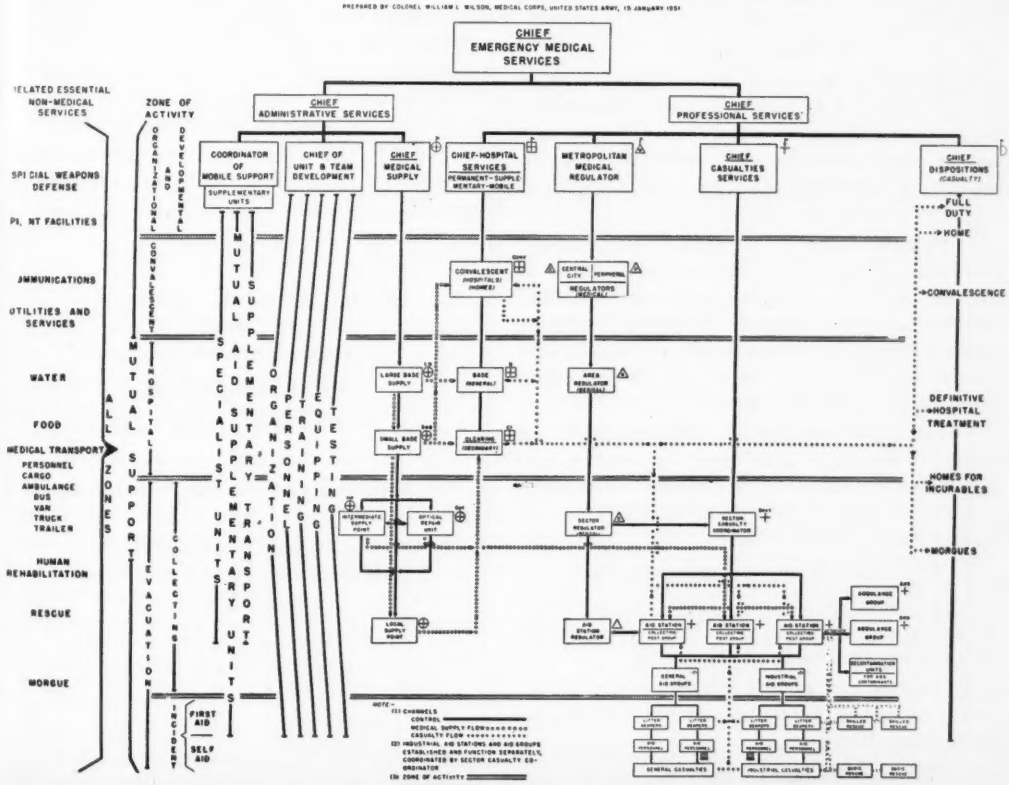

Figure 3. Suggested Metropolitan Organization for Civil Defense—Handling of Casualties.

Details of useful tags and other records are available elsewhere. World War II tags[14,15] would require minor revision. Appropriate uniformity on a national basis probably will be established.

The third function of sorting should be considered, without delineating the many details of the work of aid personnel and litter bearers which would have preceded the reception of casualties at the Aid Station. Available references[16,17] of aid to students of this problem deserve analysis, at least briefly.

Upon arrival at the Aid Station casualties will be sorted immediately. According to pre-set priorities there must be a balancing between the significance of the individual casualty on the one hand and the feasibility and practicability of the casualties services' time and capabilities for meeting the whole casualty problem on the other. Casualties normally will be sorted according to whether their later probable disposition will be through regular evacuation channels or separate evacuation channels. The latter will handle contaminated casualties.

Strict priorities would be given to the following order, one to six, inclusive, for regular channels, and seven to 10, inclusive, for separate channels of evacuation:

(For Regular Channels)

1. Definitive treatment, life-saving and rapid first aid; initiated at aid station and continued at hospitals, or initiated at hospitals if delay for that may be risked; given for severe hemorrhage, severe penetrating abdominal and chest wounds, extensive soft tissue destruction, badly torn limbs.

2. Delayed definitive treatment initiated at aid station and continued at hospitals, or initiated at hospitals if delay is possible; given, after handling the first group of definitive treatments (subparagraph 1, above), to severe burns (1/5 to 1/4 of body surface, or more), compound fractures, joint penetrations, severe face wounds.

3. Immediate resuscitation, then rest, where no surgery or other care is required to save life within a few hours; initiated at aid station or hospital; given for shock, small chest penetrations, and similar cases.

4. Artificial respiration, if means available.

5. Delayed first aid and evacuation to hospital, for specialized treatment; given minor head injuries, eye injuries, peripheral nerve injuries.

6. Delayed first aid and release to home or duty; given contusions, lacerations, sprains, simple fractures, minor burns.

(For Separate Channels)

7. Radiation casualties without injuries listed above and with or without radiological contamination, evacuated to designated treatment or follow-up centers after decontamination, where feasible.

8. Radiation casualties with injuries and in order listed 1 to 6, inclusive, with or without radiological contamination, evacuated to designated treatment or follow-up centers after decontamination if feasible.

9. Chemically or biologically contaminated casualties; after decontamination, sorted into groups seven to eight and one to six, inclusive, in that order as indicated, then treated.

10. Chemically or biologically contaminated without injury; after decontamination, released to duty or home.

The final activity of the aid station prior to disposition would be provision of treatments, followed by transfer to hospital, home, duty, or to morgues as necessary. The details of treatment need no further discussion here.

After such sobering reflections let us recapitulate. We have covered some basic factors related to handling casualties; next, some essential components of a casualty-handling system have been listed; some available methods for applying military experience to handling civilian casualties in a civil defense system have been suggested. Extremely complex and intricate matters have been shown to assume understandable simplicity by arranging them in order, by eliminating confusing and extraneous details.

All of this discussion should impress thoughtful people with the absolute necessity for preventing or

A B C
of
SIMPLIFIED CIVIL DEFENSE
AGAINST
HIGH EXPLOSIVES

Avoid Becoming Casualties

All in Poor Shelters = Fewer Casualties
than
Half in Good Shelters . . . and . . . Half in Open

IF

Prospect of Becoming a Casualty IS
1 When standing in open or in street
then it is
½ Lying down in open or in street
⅓ Lying behind low cover or in doorway
1/7 Concealed in brick house away from windows
1/16 in shelter

Table 2. ABC Simplified Civilian Defense Against High Explosives (avoid becoming casualties).

reducing the great numbers of wounded and for minimizing the severity of injuries producing the casualties. Unless that is done no system adequate for handling casualties foreseeable in modern war could be designed, much less implemented. Education of the public will achieve inestimable benefits, even though it were the sole means of response available to us. The fact that other means are available may not justify neglect of the greater possibilities of success from training the public. The teaching must be simple, convincing, and persistent, by practicing physicians and health department personnel. The public should learn that not only numbers of casualties can be reduced (Table 2) but that severity of injury may be minimized also.

That would be true preventive medicine, and in keeping with the best traditions of productive public health. The public health methods known to our departments, particularly mental hygiene and health education techniques, offer valuable and suggestive guides to civil defense of the future. As has been true when real medical problems of the past have appeared, team-work between the practicing physicians who are treatment experts and the public health specialists will overcome all obstacles in the handling of casualties.

We know we shall succeed.

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Urology and Internal Medicine*

Herman L. Kretschmer, M.D.

Chicago, Illinois

It is a privilege and an honor to be with you today and to deliver the fourth Peter T. Bohan lecture. This lecture was established as a tribute to a great physician by his former students, friends and colleagues.

Doctor Bohan has wielded an important influence in this section of the country. The high ideals he has instilled into the minds of his students, interns, nurses, and colleagues stand as a monument to his achievements as a teacher, consultant and practitioner of internal medicine.

The many borderline problems in diagnosis that arise almost daily in the practice of the internist and the urologist are mute evidence of the close relationship between internal medicine and urology. I wish to discuss with you some of these borderline problems which are encountered so frequently.

*Fourth Peter T. Bohan lecture at the University of Kansas School of Medicine.

The importance of a broad general training as a foundation for specialization again needs to be emphasized. Having started my professional career as a general practitioner, I speak from experience. It is doubtful whether the large medical ward takes the place of a few years in general practice since the type of patient seen is entirely different. Conscious of this defect in our training, there now is a tendency to have the trainee spend a certain amount of time with a well qualified general practitioner.

The keystone in the arch of the practice of medicine is the patient himself. Because a patient consults the urologist first, does not necessarily make him a "urological case." Failure to recognize this fact often results in a long course of unnecessary treatment.

To elicit a good history takes time. However, one is well repaid for his time and trouble. Many of the preliminary facts may be obtained by an

assistant, but the final interpretation of symptoms and signs cannot be delegated to another.

With the increasing mechanization of medical practice, the history and physical examination are so frequently glossed over, and short cuts in the form of mechanical aids are used instead. It is deplorable to see patients who have had innumerable tests made, the reports of which they bring with them, and in whom no physical examination was made! The sad part of this routine is that it leads to useless and unnecessary laboratory tests, and adds greatly to the already high cost of medical care.

The So-Called "Male Climacterium"

The use of this term is most unfortunate. There is no justification for it. In lieu of trying to determine the cause of the patient's complaint, it is used as a catch-all, and all too frequently the patient is given long courses of hormone injections which obviously he does not need and which are not the answer to his problem.

Because of the age of the patient and his vague and indefinite symptoms, such as nervousness, hot flashes, insomnia, etc., a diagnosis of "male climacterium" is made. The symptoms are frequently psychic in origin. The history is of the greatest importance and often gives the physician the clue to the cause of the patient's symptoms. A little patience and a few direct questions on the part of the physician will generally ferret out the cause of the patient's symptoms. Simple direct questions will usually bring to light their origin, which may vary from family trouble and the fear of losing his job because of his age, to financial worries, etc. It is obvious that such a patient will not benefit from a long couse of hormone injections.

Thyroid Disease and Urinary Symptoms

Urinary symptoms, such as frequency, urgency, burning, etc., appearing concomitantly with hyperthyroidism, occur frequently enough to bear this possibility in mind and hence to avoid a series of bladder treatments that are not indicated.

The presence of great nervousness, a fine, fast tremor and a rapid pulse make the diagnosis of hyperthyroidism perfectly obvious at the time of the first interview.

I have recently seen several patients with marked urinary symptoms due to hyperthyroidism and in whom the urological examination was negative. In one case, a few simple questions elicited the fact that the patient was taking three grains of thyroid a day without medical supervision.

Parathyroid Disease and Urinary Disease

The specialist must never lose his medical point of view. This is amply illustrated by the patient with recurring kidney stones. The number of patients with parathyroid disease and kidney stones is not very large. However, the relationship between the two should be constantly borne in mind, (1) especially when the patient has had one or more operations for renal or ureteral calculi; (2) has passed calculi over a long period of time; or (3) when following a nephrectomy the patient now harbors stones in the remaining kidney.

In a certain number of instances careful palpation of the neck demonstrates the presence of an adenoma of the parathyroid gland. When hyperplasia is present, instead of an adenoma, palpable enlargement may be absent.

The presence of bone cysts in a patient with kidney stones should at once arouse our suspicions for parathyroid disease.

The incidence of parathyroid disease in the average kidney stone case is very rare. The diagnosis of parathyroid disease in the presence of renal and ureteral calculi is made from the changes in the blood calcium and blood phosphorus.

The incidence of kidney stones in parathyroid disease is fairly frequent.

Pernicious Anemia

Pernicious anemia with spinal cord changes resulting in bladder symptoms brings the patients to the urologist. Frequency of urination, difficulty, and at times, dribbling, coupled with a few pus cells in the urine, unfortunately result in local treatment in the form of irrigations and instillations "without relief."

The pallor, unsteady gait, and Romberg sign, and changes in the knee jerks suffice to make a diagnosis of spinal cord bladder. The blood count clinches the diagnosis.

Spinal cord bladders due to pernicious anemia are not very common today because of the early diagnosis and treatment of pernicious anemia, but the possibility must always be borne in mind.[2]

Leukemia

The urologist is frequently the first one to be consulted by the leukemic patient. The symptoms presented are hematuria and priapism.

The hematuria is due to leukemic infiltration of the kidney and the priapism due to leukemia infiltration of the corpora cavernosum. They are rarely both present at the same time.

The patient with persistent priapism should at once call our attention to the possibility of leukemia. The onset is slow and the course progressive until finally the priapism which at first was intermittent is constant.

There is nothing characteristic of the hematuria. A tentative diagnosis can often be made from

the history and the presence of an enlarged spleen or the enlarged lymph nodes. The routine blood examination establishes the diagnosis except in rare instances when a sternal puncture must be made.

A complete urological examination is necessary to rule out other causes of hematuria.

Backache

Backache in the minds of the laity means kidney disease and hence many patients with backache consult the urologist.

Of the many kidney lesions responsible for backache, I shall mention only a few: hydronephrosis, tumor, stone, tuberculosis, polycystic kidney, solitary cyst and nephritis.

If the urological examination is negative, one is confronted with the consideration of all other causes of backache. Among these may be mentioned arthritis of the spine, intercostal neuritis, fibrositis, prolapse of a disk, and myositis.

Probably the most common urological cause of backache in the young or middle-aged male is chronic prostatitis.[3] The prostate as the cause of backache is frequently overlooked because there are no symptoms directing attention to it. Rectal examination showing changes in the prostate and the presence of pus in the prostatic strippings establish the diagnosis of chronic prostatitis as the cause of the backache after the previously mentioned causes have been excluded.

Orthostatic Albuminuria

Because the patient has been told he has kidney trouble, or in response to a request for urological consultation, it falls to the lot of the urologist to see patients with orthostatic albuminuria. At times this presents a difficult diagnostic problem. The problem of whether or not the patient has a nephritis or an orthostatic albuminuria is of great importance to him.

Young, Haines and Prince have suggested that the following criteria be met before a diagnosis of orthostatic albuminuria is made: (1) no past history of renal cardiovascular disease; (2) no elevation of blood pressure; (3) no white blood cells, red blood cells or casts in the urine, except intermittently and in small numbers; (4) normal kidney function (phthalein, urea clearance, dilution and concentration tests); (5) normal blood chemistry, nonprotein nitrogen, blood urea, total protein and albumin: globulin ratio; (6) negative plain x-rays and normal intravenous urograms; (7) absence of albumin in urine secreted when the patient is in the horizontal position.

Albuminuria of this type requires no treatment and there is no reason why the patient should not go about his activities in a normal manner.

Association of Mental Disease and Urinary Disease

In some cases the presence of an unrecognized severe mental illness may be the cause of a difficult postoperative management. It is because of this possibility that great care must be exercised in the problem of diagnosis and treatment of urinary tract disease in a patient who may have severe mental disease.

I have in mind a young woman of 18 upon whom I operated for a large benign tumor of the bladder. During her convalescence, she was the most irascible patient in the hospital. Nurses, interns, residents all thought she was a badly spoiled child. Several years later she was admitted to another hospital with the diagnosis of dementia praecox from which she no doubt suffered at the time of the bladder operation, and which explained her conduct during her postoperative convalescence.

Foci of Infection

Foci of infection in the teeth, tonsils or sinuses may be responsible for lesions in the genito-urinary tract. An acute attack of tonsillitis has resulted in an acute attack of pyelonephritis with or without gross hematuria.

Chronic infection in the tonsils or teeth may result in chronic pyelonephritis. An acute exacerbation of a chronic tonsillitis has been followed by a profuse painless hematuria. In a patient with profuse symptomless hematuria, in whom the cystoscopic examination shows the presence of submucous hemorrhages, we at once direct our attention to the teeth, tonsils and sinuses for the possibility of infection. In some of these cases we have isolated the same type of streptococci from the urine as were isolated from the tonsil, the teeth, or sinuses, thus establishing causal relationship.

In some cases of chronic prostatitis, the only etiological factor that can be demonstrated is the presence of infection in teeth, tonsils or sinuses. It may be difficult to establish the causal relationship between the distant foci of infection and the chronic prostatitis. Even so, it is the duty of the urologist to advise the patient to have these foci of infection eradicated purely as a health measure.

The importance of eliminating foci of infection in the prevention of pyelitis of pregnancy was demonstrated by Heaney and Kretschmer.[1]

Since the elimination of foci of infection during pregnancy was established as a routine at the Presbyterian Hospital, their incidence of pyelitis during pregnancy was reduced to 0.3 per cent, the lowest incidence that I am familiar with. The patients who were admitted with acute pyelitis all had failed to follow advice in the out-patient department to have their various foci cleared up.

Rectal Lesions

The need for the urologist to evaluate gastrointestinal symptoms, especially in the man of prostatic age, is important. When the patient who has prostatic symptoms presents himself for treatment and gives a history of a sudden change in bowel habits, our suspicion should at once be aroused for the presence of a carcinoma of the bowel or rectum, since changes in bowel habits are not due to prostatic obstruction.

With the history of a change in bowel habits, especial care must be used during the rectal examination to search with the examining finger for the presence of a carcinoma of the rectum. If this is negative, then proctoscopic examination and a barium enema are in order.

I recently had two patients who presented themselves for operation for prostatic disease. In taking the histories, the patients mentioned that a change had taken place in bowel habits. Rectal examination revealed that the patients had carcinoma of the rectum, in addition to their prostatic lesions.

Recurring Attacks of So-Called "Cystitis" in Women

I wish now to discuss an interesting group of women in whom a diagnosis of recurring attacks of cystitis is made and in whom the urological examination is negative when she presents herself for examination. They form a relatively large group and are seen both by the general practitioner and urologist. They travel from one doctor's office to another, receive all sorts of local treatments without results. Many are treated with hormones, vitamins and "shots" of various kinds. It is obvious that in dealing with this type of patient it is of the greatest importance to determine the cause of the "recurring attacks of cystitis."

In a very large number of these patients, one has no difficulty in obtaining a history of disturbances in the intestinal tract. It is striking to note how frequently these women give a history of chronic constipation, loose and frequent bowel movements, due to so-called spastic colitis or the use and abuse of cathartics.

Some of these patients volunteer information that they have been under treatment for a "spastic bowel" without result. I have been convinced for a long time that many of them are on a psychogenic basis.

Some of the cases of so-called "cystitis" are on a purely psychic basis. This is usually established after organic disease has been excluded. Among the many psychological factors I have seen, I would like to mention only a few: recent or remote suicide of the husband, fear of pregnancy, the marriage of a favorite son or daughter, the fear of transmitting a long since cured venereal disease, etc.

Another frequently overlooked cause for the recurrent attacks of cystitis is amoebiasis. The importance of an accurate history and diagnosis is illustrated by a recent patient who had many cystoscopic examinations, ureteral dilatations, intravenous and retrograde pyelograms and local bladder treatments for many years. In addition, she was taking a hormone, a vitamin, a barbiturate, one of the sulfa compounds and potassium bromide.

When I questioned her about her bowel movements, she stated her bowels were fine because she had five or six good movements a day. Examination of the stool for amoebiasis pointed the way to proper treatment. Examination of other members of her family revealed that they too had infestation with the amoeba.

Some cases of frequency of urination are associated with dyspareunia. At times it is difficult to obtain a history of dyspareunia because of modesty or disappointment.

Then there is the occasional woman of the opposite type who has recurring attacks of so-called "cystitis" and who tends to focus all her attention on her bladder symptoms and who boasts to interns, residents and nurses of her sexual powers and of her many extra-marital affairs. I have seen women of this type who have had bladder treatment for many years. What they need, of course, is treatment by a psychiatrist.

Stricture of the Ureter

Fortunately, the hyperenthusiasm for the treatment of so-called stricture of the ureter is on the wane. All too frequently a diagnosis of stricture of the ureter is made, often on a purely symptomatic basis and without evidence of dilatation of the ureter or kidney pelvis. As a result, the patient is subjected to many ureteral dilatations without relief.

Many of these patients who are women have definite psychological problems, such as a recent or impending divorce, an errant husband or in-law troubles. Naturally this group of patients will not be benefited by ureteral dilatations.

On the other hand, in many of these women the symptoms are due to organic disease in the pelvic organs that need surgical correction. For example, I recently saw a woman who had over 40 ureteral dilatations without relief of her symptoms. The underlying cause of her symptoms was an extensive endometriosis.

It is evident that great care must be used in selecting cases for treatment with ureteral dilatation.

Impotence

Most cases of impotence are in persons who first consult the general practitioner.

There is no problem of greater importance to the general practitioner, internist or urologist than the problem of the patient with impotence. Frequently a diagnosis of sexual neurasthenia is made and the patient is given "the brush-off." This is most unfortunate.

The importance of an accurate diagnosis and the institution of proper treatment is imperative, because a cure will or may in many cases prevent the breaking up of a home since impotence is a common cause for divorce.

There is no justification for prescribing hormones, vitamins, "shots," etc., without a detailed examination of the patient. The problem becomes a very simple one for the general practitioner if he will bear in mind the three common causes of impotence: 1. general; 2. local; 3. psychic.

1. *General Causes.* The history and physical examination are the starting point to rule out systemic disease such as severe mental disease, tabes dorsalis, chronic nephritis, diabetes, intoxication due to alcohol or tobacco, tuberculosis, etc.

2. *Local Causes.* It is assumed that the external genitalia are normal. The most frequent cause of impotence, in my experience, is chronic prostatitis or seminal vesiculitis or both, as they so frequently occur together. The rectal examination, plus the microscopic examination of the expressed fluid, serve to establish the diagnosis.

3. *Psychic Origin.* Next to chronic prostatitis, psychic factors are the most frequent causes. At times it may be difficult to elicit the psychic factor. When the facts are presented to the patient, namely, that there is no organic cause for the impotence (no evidence of disease either systemic or in the genito-urinary tract) and that there must be a psychic cause for his impotence, it is generally quite easy to obtain his cooperation and to have him give the reason for his impotence.

Impotence associated with severe mental disease is relatively rare, but its possibility must always be borne in mind. I recently saw a dentist whom I examined twice and each time he was negative, but he seemed highly nervous. I then learned that he was under treatment by a psychiatrist who told me that he was a serious mental case and might kill himself or maybe someone else.

Elusive Ulcer

Because many of these patients consult the general practitioner first, it is well for him to be on the alert for this type of bladder lesion.

The history is that of frequent and often painful urination which has been present for a long time and which has gradually become worse and is not relieved by the various forms of treatment employed.

Often the patient has had one or more surgical operations without relief and frequently the urine is clear and sparkling, showing at most a few red or white blood cells.

The patient with this history should have a cystoscopic examination which establishes the diagnosis at once.

Congenital Anomalies of the Kidney and Ureter

Congenital anomalies of the kidney and ureter formerly were considered to be very rare. With the routine use of intravenous urograms by the urologist, the general practitioner, the internist and the surgeon, many cases of renal anomalies are recognized. Their proper evaluation is important.

The mere fact that a patient has a bifid renal pelvis does not justify an operation. If the patient complains of pain, it must be remembered that the pain may be due to something else and that the congenital anomaly is hardly to be considered as a factor in the production of pain, if the pyelogram is normal. On the other hand, in some of these cases of double renal pelvis, double ureter, a hydronephrosis may be present in one half of the double kidney, and when present may be the cause of pain. Failure to recognize this has resulted in appendectomy when a heminephrectomy was indicated. In other words, it should be remembered that the mere presence of a double kidney pelvis and double ureter does not justify operation.

In an occasional case the ureter may have an anomalous insertion outside the bladder. Cases in which the ureter is inserted in the floor of the urethra or in the vagina give a typical history of being wet day and night since birth, and hence the diagnosis is perfectly obvious.

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PRESIDENT'S PAGE

Dear Doctor:

I should like to report that in spite of inclement weather, it is purported that the A.M.A. registration reached an all-time high and most all the doctors attending felt our new president is an efficient, comparatively young, democratic leader from whom we can expect material progress. At the meeting there existed an atmosphere of quiet and possibly even satisfaction that we had, for the present, enjoyed success in halting the march of socialized medicine. This postponement or delay resulted from political and factual power, the strength of which is difficult to estimate; yet there was a feeling that no one, anywhere, should at any time relinquish his hold on the gains that have been made.

The 15-point program outlined to the House of Delegates is being pursued; unity, harmony and correlation of our efforts with allied groups are in the making, all of which is designed to improve the health of Kansas citizens.

I would like to ask that you read your June issue of the Journal because it outlines the program for the year, and I believe it is imperative each and every one of the team must know and understand the plays if we hope to realize the aims and goals we're seeking.

Regarding proposal number two: I am happy to report this program is already in progress, and I have confidence in the outcome of the survey being made by the State Social Welfare Board and the Medico-Hospital-Drug organizations. This problem is joint! The desire of all concerned is to provide the best care possible for all who are eligible. The sincerity of approach as manifested by all board and professional group members thus far in conference, is most encouraging. This I believe to be evidence of team work and good substantial progress.

I believe that every member of the Kansas Medical Society receives full value for all dues paid, and I call attention to Proposal Number 11 concerning the two-year special assessment and ask the membership to take inventory, and after comparison and evaluation I believe pride will be had in the privilege of paying this nominal request. I believe all of us would improve our reactions if and when we understood even a few of the major accomplishments of our parent organization. It has been suggested that our state programs give some time to accurately acquaint us with our A.M.A. and its activities.

Emphasis is placed upon a sincere request previously made—what can be done to improve our Society? Please don't hesitate to provide criticism that is or can be constructive. In behalf of the Council and officers I solicit your "gripes," for we want to know them. 'Tis only then proper consideration can be given when and where it's due. This correspondence can be directed to the Executive Office or directly to the writer. Let us hear from You!

I am sure that each and every member of our Society is proud of a singular distinction given our state by the A.M.A. House of Delegates in electing, for the first time I believe, a Kansas doctor to one of the councils. This honor went to Franklin Murphy by a four to one vote for a seat on the Council of Medical Education and Hospitals. Congratulations, Doctor Murphy!

Always sincerely yours,

O. W. Benage

EDITORIAL COMMENT

The Price of Public Relations

Public opinion can be altered, but not without paying a price. At a cost of $25,000 or $50,000 or more a firm of experts could be employed to correct false impressions and lack of information the public may have. Experience has proven such a procedure to be effective. The outcome can be predicted with scientific accuracy, but the cost is high.

Medicine has an alternative at its disposal. In contrast with much of industry the medical profession can provide its own public relations. This can also be effective. Again the results can be guaranteed, but once more there is a cost involved.

It is the price you pay for practicing a superior quality of medicine, giving to each patient who trusts his health into your care the very best service you can give him.

It is the price of making him feel your genuine concern over his personal welfare as though he is the only patient you have.

It involves a word of reassurance, a smile perhaps, a gesture of friendship offered in a leisurely manner that belies your own weariness.

It is the personal sacrifice in being more than fair in the matter of economics. It is thinking in service rather than dollars so that your patient not only understands your charges but leaves with the feeling that he received something more than he paid for.

It is the cost you pay for having genuine respect for the ability and integrity of your colleagues in the medical profession, and in return earning their confidence for everything you say or do.

But that is only the beginning. The price you will pay for good will from the public is the price of exceptional citizenship. As a community leader you engage in all progressive projects. As an enlightened citizen you actively support good government at local, state and national levels.

You will work toward preserving liberty in these United States and free enterprise for medicine, but with equal fervor also for all professions and industry and labor and agriculture and everyone, knowing that no one will benefit unless freedom is shared.

Even that is not all. There is also the priceless responsibility of so directing your life that you can gain the confidence of your neighbors, that respect and friendship are given you everywhere you go, that people feel better for just having met you. It is living the ideals that constitute the highest traditions in the art of medicine.

So the price of public relations becomes fantastic and $50,000 seems an easy way out. It is true, one method can be made to substitute for the other, but only to a degree. The problem is relative and just so far as we are willing to pay the price will we earn first the good will, then the support of the public. Our immediate question is simple: What is this worth? How much will we pay?

Biology of Ageing

Edward A. Bortz, M.D., of Philadelphia recently read a paper before the Medical Society of Delaware on the topic of ageing in which he stressed the coming importance of this specialty in medicine. If the utilization of the organs in the human body were maximum, the human life span should approximate 125 years. Even though we have made great strides since the Roman empire when the life span was 25 years, to 1900 when it was 49, to the present when it approaches 70, we have not yet reached the ultimate potential.

"The geriatrician is coming onto the stage at a most appropriate time. There are many patients waiting for him. An accurate survey of living practices and an appraisal of physical resources is preliminary to any prescription for our elderly patients.

"Prophylactic geriatrics recognizes the possibilities of preventive measures which can be instituted. Control of body weight, adjustment of the diet, improvement of body elimination, the elimination of infections, the need for more rest and recreation—all these are important to the continued well-being of patients approaching the summit of the years. In this area of the human life span, the biological potentials should be kept in mind. Premature human deterioration may be brought under control and an expansion of the harvest years, the happy years, may result. . . .

"Warthin describes the life of man as a tragic comedy in three acts—evolution, maturation, and involution. Medical science is now turning its attention to the last act, involution. The human machine transforms, stores, and releases energy. At birth the individual is given an energy charge with potential to carry it along for a variable period of time. Warthin describes the individual human body as a temporary incident in the life of the species.

"In the biological human life cycle the body attains full development and then struggles for maintenance at the height of maturity until energy loss brings about decline and senescence. Senescence is a gradually developing state of organ and tissue involutions. When these are sufficiently advanced as to be clinically apparent, then age is upon us. . . .

"Warthin was thinking entirely in terms of man as an animal with total disregard for the needs of society. The extension of the human life span is producing new opportunity for the development of social equilibria. Here is a new field which needs to be explored by the geriatrician.

"In striving for the preservation of human life, science is now examining the processes and influences which destroy it. It may be possible to avoid premature ageing of tissues. . . . Ageing processes are hastened or modified by diseases; therefore, one way to prolong life is to protect the organisms from illness or disease. It becomes a matter of avoiding complications which accelerate the processes of ageing.

"Certain tissue changes occur with the passage of time. Decrease in water content takes place and the individual shrinks in weight and stature. There is progressive dehydration, there is condensation of colloids. Elasticity and flexibility decrease. Wells believes this accounts for the ageing of elastic colloidal fibers in blood vessel walls.

"Physiological reserves are likely to diminish with the passage of time. The decrease of adaptability is a sign of oncoming age. . . .

"The rich colors and qualities of interesting mature human life with the performance of work which has social significance will add to the quantity and quality of human living. Newer drugs, including the antibiotics, the vitamins, the hormones, cortisone, and ACTH are a few of the spectacular remedies now in the armamentarium of the geriatrician. The expansion of the mature years represents a major goal of science today."

Federal Health Legislation

Numerous health measures of one kind or another have been introduced before this session of Congress. The Washington office of the American Medical Association summarizes the most important of these measures and reports to the various state societies their progress and what, if any, action the A.M.A. has taken. A few days ago some 30 such bills were reported on a variety of subjects.

The A.M.A. disapproves of the passage of H.R. 3298 and S. 1186, identical measures dealing with refilled prescriptions. The objectives of these bills are approved, but such legislation is not now considered necessary or desirable in the belief that control of professional practices should remain in the states. Disapproved also is H.R. 3559 which would establish a federal agency for the handicapped. The A.M.A. states that approval should not be given to establish a department for small segments of the field of medicine, that it would cause an overlapping of services and an unnecessary expenditure of funds. There are some eight or 10 similar bills which were disapproved for the same reasons.

The A.M.A. also registered disapproval over H.R. 3931 which would create the United States Medical Academy, on grounds that facilities would be difficult to obtain and selection of entrants would probably be political. Disapproved are H.R. 3996 authorizing the V.A. to presume service connected disabilities and H.R. 4176, the new version of the World War II E.M.I.C. plan. Objections to the first are on grounds that this would further liberalize V.A. regulations, and as for the second it is felt there is not sufficient need. One other disapproval was voiced for H.R. 4322, attempting to provide school health services, because the bill does not offer a means test.

In the same list are numerous bills that were approved by the A.M.A., for example H.R. 3257 offering research regarding chemical activities in food, another, H.R. 3536, exploring health hazards of air pollution, the latter on grounds that this is a new and unknown field in medicine requiring research.

Some publicity has been given through the press and by way of the radio for certain other health proposals. Senate Resolution 142 proposes to examine the Hoxie Cancer Clinic of Dallas, Texas, to determine whether the methods employed by this clinic in the treatment of cancer have proved to be a cure for such diseases. The A.M.A. is awaiting the results of this investigation with interest and will withhold comment until the findings are available. House Resolution 238 proposes to appoint a study group to investigate the problems of ageing. Again the A.M.A. is withholding comment until the results of this study may become known. At that time there will undoubtedly be recommendations by the investigating committee which will receive the scrutiny of the A.M.A.

There are, of course, continued activities with reference to the war manpower bill and federal aid to medical education. Even though hearings are being conducted and both bills seem to be progressing in the Congress, there is no certain indication at the present time of the final composition of either. The war manpower bill probably will set the term of physician draftees from 21 to 24 months and will defer pre-medical students at the present level of medical school enrollment. This bill also currently proposes to release World War II reserves who have served in Korea for 17 months. It proposes to limit the Army to 5,000,000 men and permits educational deferments for medical and other persons at the discretion of the President. It appears that some form of federal aid to medical education will be provided, and the House of Delegates

of the A.M.A. approved such aid in the form of grants to defray building cost. More complete information on these measures can be obtained through the Executive Office of the Kansas Medical Society, 512 New England Building, Topeka.

Medical Journalism

A recent article in the New England Journal of Medicine on medical literature surveyed the history of scientific publications. It was surprising to learn, for instance, that there are between 8,000 and 10,000 journals published today that are devoted to medicine and related sciences. Attempting to index and record this mass of literature has become a tremendous problem. The *Quarterly Cumulative Index Medicus* is falling far behind in its task of attempting to record some 90,000 articles a year of the 200,000 or more that are published. Unesco is trying to work this subject over on a uniform international basis.

The first known medical journal was published in France in 1679 and gave up in 1683. The second appeared in Holland in 1680 and the third, a German publication, in 1682. The fourth journal that appeared and the first in the English language was *Medicina curiosa,* a quarterly of 56 pages, the first issue of which was published on June 17, 1684. The second issue appeared on October 23 of the same year, but the effort was too great and it forthwith expired.

The first New World journal was the *Mercurio volante* that was published, surprisingly enough, not in the United States but in Mexico City. It continued through 16 issues and stopped in February, 1773. In the United States there were occasional medical articles but nothing approaching a journal until the *Medical Repository* appeared in New York in 1797.

Morris Fishbein, studying the history of medical literature, stated that the 18th century produced some 80 medical periodicals, of which 55 were German, four English, three French and one American. The journals of the 17th and 18th centuries are literary curiosities when contrasted with present day communications. None have survived to the present time and only a few are even remembered.

The *Edinburgh Medical and Surgical Journal,* started in 1805, is the oldest publication still current. The *Lancet,* published in London, is next, and third is the forerunner of the present *New England Journal of Medicine,* which began in Boston as a quarterly periodical in 1812.

The American Medical Association was founded in 1847 and at the first meeting a committee on medical literature was appointed of which Oliver Wendell Holmes was a member. This committee determined to prepare "an annual report on the general character of the periodical medical publications, on medical compilations and compends by American writers, on American reprints of foreign medical works, and on all such measures as may be deemed advisable for encouraging and maintaining a national literature of our own." Thirty-six years later, on July 14, 1883, the *Journal of the American Medical Association* was born. Since that time most of the other present day journals were started. Many are published by medical societies, specialty organizations, clinics and hospitals. Some are supported entirely by advertising, but all perform the service of providing an outlet for a scientific opinion of the medical profession.

Annual Registration Fees Due

Individual notices were mailed last month by the Kansas State Board of Medical Registration and Examination to all Kansas physicians at their last known addresses, advising that the annual registration fee of $1.00 would become due and payable on July 1. Early payment is urged. Those who are delinquent on October 1 will be required to pay a reinstatement fee of $5.00 and present two affidavits.

A.M.A. Meeting

A total of 28,396 persons registered at the June meeting of the American Medical Association in Atlantic City, including 12,229 physicians and 16,167 guests. Dr. John W. Cline, San Francisco, was installed as president and the following officers were named to serve with him: Dr. Louis H. Bauer, Hempstead, New York, president-elect; Dr. Oscar B. Hunter, Washington, D.C., vice president; Dr. George F. Lull, Chicago, secretary; Dr. J. J. Moore, Chicago, treasurer; Dr. F. F. Borzell, Philadelphia, speaker of the House; Dr. James R. Reuling, Bayside, New York, vice speaker. Dr. Dwight H. Murray, Napa, California, succeeds Dr. Bauer as chairman of the board of trustees.

Among actions taken by the House of Delegates were approval of a plan to retain Chem Whitaker and Leone Baxter to manage the A.M.A. educational campaign, adoption of a resolution which supports federal aid to medical schools for construction only, authorization to expand the A.M.A.'s Physician Placement Service through which many communities obtain assistance in securing the services of a physician, adoption of a resolution which urged a "thorough investigation" of activities aimed at indoctrination of students with the "insidious and destructive tenets of the welfare state."

The 1952 meeting will be held in Chicago, 1953 in New York, and 1954 in San Francisco. The clinical sessions will be held in Los Angeles in 1951, in Denver in 1952, in St. Louis in 1953 and in Miami in 1954.

Case Reports from the University of Kansas Medical Center* Tumor Conference

Carcinoma of the Colon

Edited by R. E. Stowell, M.D., and D. M. Gibson, M.D.**

Case No. 51-18

E. L., a 54-year-old woman, was admitted to the University of Kansas Medical Center on January 18, 1951, with a history of progressive fatigue and pallor for 18 months. She had had no change in bowel habit, weight loss, or cardiorespiratory or genitourinary symptoms at this time. Her local doctor gave her weekly liver injections, iron, vitamin B_{12} and folic acid medication for anemia. During 10 months on this regime she became progressively more anemic. She began to lose weight five months after onset of her symptoms, and after 10 months she noticed a stony hard and tender mass in the right upper quadrant of her abdomen. A presumptive diagnosis of carcinoma of the colon was made in the Out-Patient Department and was verified by barium enema.

On hospitalization, the patient's hemoglobin was five grams, red blood count 2,970,000 and total proteins 5.2 grams per 100 ml. Other laboratory studies were normal. After seven pints of whole blood, the patient's hemoglobin was 13 grams, with 4,100,000 red blood cells and total blood proteins 6.2 grams. At surgery, an annular tumor four cm. distal to the cecum was freely movable. There were two or three 1 x 1 cm. nodes in the mesentery of the right mesocolon. No distal spread was ascertainable. A right colectomy was performed and the patient's postoperative course was uneventful. She received three more blood transfusions and her hemoglobin was 13.8 grams on discharge on February 3, 1951.

Case No. 51-19

L. O., a 44-year-old white man, was admitted on January 9, 1951, following a routine checkup. At that time he had no specific complaint, other than a little tiredness. He had no weight loss and no gastrointestinal symptoms. During his routine physical examination, the examiner noticed tenderness in the lower left quadrant of his abdomen and suggested a barium enema, which showed a filling defect characteristic of carcinoma. The patient attributed his disease to the fact that he has eaten from three to 10 pounds of popcorn a week for the last 30 years.

On admission to the hospital, the patient's blood and urine were normal, as was his physical examination. Barium enema revealed only an annular constricting lesion in his mid-descending colon. No polyps were noticed on sigmoidoscopy. During surgery an annular lesion in the mid-descending colon was found, without evidence of local or distant spread. After a left colectomy, his postoperative course was complicated only by a small fecal fistula which was closing satisfactorily when the patient was discharged on January 28, 1951.

Dr. Tice: Roentgenograms on the first case show an annular, constricting lesion about an inch and one-half long, just below the hepatic flexure of the colon. It is characteristic of carcinoma of the colon, in that the barium column is cut off sharply at both ends of the lesion.

Roentgenograms on the second case show a filling defect in the descending colon. As shown in Figure 1, this is a longer lesion than that seen in the first case and has the same characteristics, in that the flow of barium is cut off sharply at both ends. Instillation of air following the evacuation of barium failed to demonstrate any polyps.

Dr. Summerville: The surgical specimen in the first case consisted of the terminal ileum, cecum, and

Figure 1. Roentgenogram showing filling defect in descending colon. Case 51-19.

* Cancer teaching activities aided by a grant from the National Cancer Institute.

** Trainee of the National Cancer Institute.

the right colon. There is an annular, constricting lesion in the ascending colon which, on microscopic examination, is a typical mucoid adenocarcinoma. Four of the eight regional lymph nodes examined showed metastases.

The surgical specimen in the second case consisted of the descending colon, with an annular, constricting lesion in the mid-portion. Microscopically this proved to be ulcerated adenocarcinoma. None of the 10 lymph nodes examined showed any evidence of tumor. In addition, many small sessile polyps were present throughout the length of colon.

Dr. Helwig: These are two interesting carcinomas of the colon: one is in the right colon, the other is in the left colon; one of the lesions is large, the other is relatively small; in one case the duration is long, in the other it is relatively short; in one case there is marked anemia, in the other there is no anemia. Both are in a common age group for these tumors. In the second case, polyps are a possible predisposing factor.

Dr. Orr: The history in the first case is significant: the patient consulted her physician 18 months before the correct diagnosis was made, and was treated for anemia. It is important to remember that with any patient who is losing strength and is anemic, it is mandatory to find out to what the anemia is due before treatment. It is often difficult to determine the cause of secondary anemia, but one of the first things to consider is carcinoma of the colon or stomach. Many of these patients lose their lives because they are treated for secondary anemias and are not operated upon soon enough. In any patient who is losing strength and appetite, in addition to being anemic, one should always think of the possibility of carcinoma of the colon, particularly the right colon.

The second case differs from the first one. This man had practically no symptoms, and his lesion was discovered since his doctor suspected the possibility of a carcinoma because he had some slight discomfort and tenderness in his left abdomen. He had no bleeding or anemia and was not sick; but he had a rather extensive carcinoma. These two patients exemplify the care which we should take in making diagnoses of carcinoma of the colon, because they can remain silent for a long time. This carcinoma of the right colon is atypical because it is much more common to have a large fungating carcinoma rather than an annular, constricting one. On the left side, however, the constricting type is common. As you know, the right and left colon differ considerably. Embryologically the right colon is derived from the mid-gut, whereas the left colon is derived from the hind-gut. They have a different blood supply: the right colon is supplied by the superior mesenteric artery, and the left colon is supplied by the inferior mesenteric artery. They also differ physiologically: the function of the right colon is chiefly absorption, whereas that of the left colon is storage and excretion. Pathologically, the lesions in the right colon are likely to be the large fungating type which produce anemia, whereas in the left colon they are more likely to be of the constricting type which produce obstruction.

A considerable number of carcinomas of the colon are curable. The five-year survival rate in carcinoma of the recto-sigmoid areas is probably 60 to 70 per cent in those cases that are resectable. About 65 per cent of the carcinomas of the colon occur in the recto-sigmoid area. Carcinoma of the sigmoid and cecum probably have a little better prognosis than carcinoma elsewhere in the colon. The lymphatic supply is more abundant in the cecal region; however, metastases apparently do not occur any earlier or more extensively in the cecal region than elsewhere in the colon. The anemia in carcinoma of the right colon is probably due to bleeding but some believe that the large ulcerating areas permit greater toxic absorption, and that this produces the anemia.

Dr. Helwig: I agree that bleeding is the cause of the anemia, for the reserve iron is so low (the body has just four grams of iron; over half of this is in use all the time, and the rest is stored to make more hemoglobin) that it doesn't take much bleeding to decrease the iron storage, thus producing a microcytic, hypochromic type of anemia that is classical of carcinoma of the right colon. I think there is an increased absorption of toxin, but probably a decreased absorption of iron, and that may also be a factor because these patients don't respond well to simple iron therapy. Early obstruction in carcinoma of the right colon is uncommon because of the greater diameter and liquid content, as compared to the left colon.

Dr. Lilly: The most important etiologic factor in these carcinomas is polyposis. Polyps are potential cancers of the bowel; and it is essential to remember that, with polyposis of the colon, a second primary cancer may develop subsequent to the successful extirpation of the first tumor. The incidence of such a second cancer is approximately seven to 10 per cent. Gilchrist and David[1] studied 200 consecutive cases of cancer of the bowel; of 29 of these cases involving the right and left colon, they found that the five-year survival rate for carcinoma of the right colon was 82 per cent (77 per cent for those with metastasis and 100 per cent for those without metastasis at operation). On the other hand, the five-year survival rate for carcinoma of the left colon was 61 per cent (37 per cent for those with metastasis and 80 per cent for those without metastasis at operation).

They did meticulous mesenteric dissections and post-mortem studies, and charted the location of all lymph nodes observed. They found that the reason for the marked difference in prognosis between carcinomas of the right and left colon was failure to appreciate the pattern of lymphatic spread, and hence, too conservative resections. They established the fact that in the area of the splenic flexure the lymphatic spread was broad, while in contrast the lymph drainage of the right colon was relatively concentrated. Gilchrist and David[1] felt, for example, that a lesion in the descending colon should be resected from the right side of the mid-transverse colon down to the sigmoidal redundant part of the colon in order to remove lymphatic drainage widely.

Dr. Summerville: It is entirely possible that some discrepancy may exist between what the pathologist finds and what the roentgenograms show, since the radiologist would not be able to delineate polyps that were as small as one or two cm. in size. Some authors state that 10 per cent of the colonic polyps show evidence of malignancy, and that as high as 30 per cent of the cases of cancer of the colon have been associated with one or more polyps.[2] Polyps are found more frequently as one goes from the right side to the left side of the colon, so that they are more frequent in the sigmoid and rectum than in the cecum or ascending colon. Polyps other than those of congenital polyposis are also more frequently found with advancing age.

Dr. Helwig: One case of congenital polyposis reported some time ago[3] had seven operations over a period of 14 years for seven separate and distinct carcinomas. At the time of resection of the last segment of colon, four more carcinomas were found.

There appears to be a definite etiologic relationship between chronic ulcerative colitis and carcinoma of the colon. In a series of some 1,500 cases of chronic ulcerative colitis[4] there was an incidence of 1.9 per cent carcinoma, whereas in the general population the incidence is about .02 per cent, so carcinoma is almost 100 times more frequent in chronic ulcerative colitis. The Mayo Clinic[5] reported a series of some 2000 cases with an incidence that was a little over five per cent. Apparently in younger individuals—those that have had their ulcerative colitis since childhood—there's a much higher percentage of those that will subsequently develop carcinoma, suggesting that long-standing chronic irritation may be a significant factor.

Dr. Orr: There may be from one to hundreds of polyps in the colon. As in this second case, with general polyposis, the probabilities are that the patient has polyps throughout his colon, although they are unrecognized by sigmoidoscopic examination. What should one do with this patient in the future? Should one advise him to have a complete colectomy now, or should one watch him very carefully? If he has general polyposis, he will probably develop another carcinoma. It is said that the patient with general polyposis always develops carcinoma if he lives long enough. In that event, a colectomy of course is indicated. This man should be watched carefully, and if there is any suspicion of recurrence he should have the major part of his colon removed. If there are no polyps in his rectum, then there should be an anastomosis to the rectum. Such patients should not be turned loose and told that they are all right; they should have repeated roentgen examinations and should be watched for any evidence of bleeding or discharge of mucus or anything that might indicate the possibility of another carcinoma.

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DEATH NOTICES

WALTER J. PEARSON, M.D.

Dr. Walter J. Pearson, 86, an honorary member of the Wyandotte County Society, died at his home in Kansas City on June 1. He was a graduate of the University of Kansas School of Medicine with the class of 1907 and received his Kansas license the same year. He practiced continuously in Kansas City until his retirement several years ago.

* * *

HECTOR MORRISON, M.D.

Dr. Hector Morrison, 81, who had practiced in Smith County for 50 years, died June 6. He was graduated from the University of Toronto Faculty of Medicine in 1900, and came to Kansas that year, practicing first at Womer and later moving to Smith Center. He was an honorary member of the Smith County Society.

* * *

WILLIAM LAW WILMOTH, M.D.

Dr. W. L. Wilmoth, 80, an active member of the Marshall County Society, died June 21 in a Marysville hospital. After his graduation from the University of Nebraska College of Medicine in 1901, he practiced several years in that state before moving to Denison and then to Blue Rapids, where he continued in practice until his death.

Senior Thesis from the University of Kansas Medical School*

Diabetic Neuropathy

William S. Mowrey, M.D.**
Oceanside, California

The occurrence of specific disorders of the nervous system as a complication of diabetes mellitus has been recognized since de Calvi's classical paper in 1864.[1] "(He) . . . observed pains of sciatic distribution and peripheral areas of anesthesia in diabetic patients and introduced the idea that neurological lesions were the result of diabetes mellitus rather than the cause of this disorder."[2] Bouchard[3] in 1884 noticed that tendon reflexes were frequently absent in diabetics. Pavy,[4] a year later, noted "lightning pains, exquisite cutaneous hyperesthesia, and the nocturnal intensification of the neuritic symptoms."[2]

The neurologic complications of diabetes mellitus were thus clearly recognized some 85 years ago. Nevertheless, much still remains unknown about the etiology and pathology of diabetic nerve lesions.

Diabetic neuropathy may manifest itself in many ways. According to Root and Rogers[5] and Rudy and Epstein[6] diabetic neuropathy is not limited exclusively to the peripheral nerves but involves the entire nervous system, including the central, peripheral and autonomic parts with an especial predilection for the peripheral nerves.

Rundles[2] likewise stresses this point. He states that patients with diabetic neuropathy may develop evidence of peripheral sympathetic nerve damage as revealed by sweating deficiencies, loss of vasomotor and pilomotor control, dependent edema and certain types of skin alteration. He further described eight instances of orthostatic hypotension, orthostatic tachycardia, and other instances of disturbed gastrointestinal and genito-urinary function and of sphincter disturbances in diabetic patients, apparently due to disturbed physiology of the visceral nervous system. He also pointed out that degeneration of the peripheral sympathetic nerves may result in increased cutaneous vulnerability, and an impairment of the mechanisms by which infections, once introduced into the tissues of the diabetic patient, are localized.

Marble[7] gives other examples of widespread involvement such as neuropathic foot resembling Charcot joint, diabetic nocturnal diarrhea, bladder paralysis, abnormal pupillary reactions, and ocular palsies.

Swarts and Stine[9] report a case of impaired intestinal motility, impotence and neurogenic bladder.

Symptoms and Signs

The most outstanding symptom of diabetic neuropathy is pain which is characteristically worse at night. The pain may be superficial or deep, aching, grinding, darting, or lancing. Not infrequently sleep is prevented throughout the night until the discomfort subsides in the early morning hours. Accompanying the pain in most instances are paresthesias, including hyperesthesia, burning sensations, numbness, formication and anesthesia. The hyperesthesia is often so marked that the patient cannot bear the weight of bed clothing upon the extremities. Mental depression and emotional instability are not uncommon.

Rundles[2] finds that muscular cramps and muscular weakness, especially of the legs, are among the early symptoms.

Abnormal neurological signs are usual and may at times be the first or only manifestation of the disorder. In Rundles' series of 125 cases he found diminished or absent tendon reflexes the most common objective sign. The Achilles' tendon reflex was diminished or absent in 90 per cent of the cases; the patellar reflexes were absent or diminished on one or both sides in 80 per cent. The biceps and triceps reflexes were diminished or absent in one-third of his patients. Marked muscle tenderness was found in 37 per cent of his cases, decreased skin sensitivity in approximately 50 per cent with nine patients showing areas of complete anesthesia.

The vibratory sense at the ankles was diminished in 37 cases and absent in 20. Collens et al[8] observed that over 93 per cent of *all* diabetics whether or not they have neuropathic symptoms have an impairment of vibratory sense through the terminal parts of their extremities. They further state that a quantitative determination of impaired vibratory sense may be used as a guide to therapy and an index of progress.

In Marble's series of 50 cases, 27 exhibited weakness of one or more extremities. Peroneal paralysis (foot drop) was present in eight instances and quadriceps paralysis in five.

Hamman[10] discusses a case of diabetic neuropathy with an Argyll-Robertson pupil. He points

* This is one of 11 senior theses selected for publication by the Editorial Board from a group of 15 judged the best by the faculty of the University of Kansas School of Medicine.

** Thesis written while the author was a senior student at the University of Kansas School of Medicine. Dr. Mowrey is now serving his internship at the U. S. Naval Hospital, Oceanside, California.

out that the symptoms of diabetic neuropathy are noteworthy in that they are the distinctive symptoms of involvement of the posterior sensory columns of the spinal cord. This has led to identification with tabes dorsalis and the pattern of symptoms is commonly referred to as diabetic pseudo-tabes.

Rundles states that the peroneal nerve is more vulnerable than the tibial and the ulnar nerve more vulnerable than the radial or median. Thirty-two patients in his study had genito-urinary and sphincter disturbances. Complete lack of sexual potency was recorded in 19 patients, and this often preceded any other symptom of peripheral nerve disorder. Eighteen patients were found to have an atonic type of bladder paralysis. The sphincter disturbances appeared to be the result of involvement of the pudendal nerve. The bladder paralysis of diabetic neuropathy is an atonic neurogenic paralysis similar to that seen in tabes dorsalis, pernicious anemia, and alcoholic neuropathy.

Of 35 recorded cases of diabetic neuropathy at the University of Kansas Medical Center, 25 of the patients complained of pain in the extremities which, almost without exception, was worse at night. Deep reflexes were absent in 10 of the 35 and were diminished in 16 others. Diminished vibratory sense was noted in eight of the series. One-third of the 35 patients complained of numbness and tingling of the extremities. Nine had anesthetic areas over the lower extremities and five had similar areas over the upper extremities. One patient had a diabetic Charcot joint of the ankle and two others suffered from diabetic nocturnal diarrhea. Two had Bell's palsy.

Incidence

Of 1450 patients admitted to the University of Kansas Medical Center between 1943 and 1950 with a primary diagnosis of diabetes mellitus, 35 were found to have clinical diabetic neuropathy and such secondary diagnosis was appended to each record. There may have been many subclinical cases that either escaped detection or were not made a matter of record.

Of the 35 cases, 26 (79 per cent) were white males between the ages of 38 and 71. About half of this number were in their middle forties. Nine of the 35 (21 per cent) were females (two of these were colored) between the ages of 38 and 65. Most of this number were in their early fifties.

Six of the 35 were diagnosed as having generalized arteriosclerosis as well as diabetes mellitus and diabetic neuropathy. None of the 35 had tabes dorsalis (or positive serology), pernicious anemia, syringomyelia, poliomyelitis, or history of alcoholism.

Regarding incidence, Marble[7] analyzed the records of 50 patients with diabetic neuropathy seen at the New England Deaconess Hospital in Boston. Of these 26 were males and 24 females, "... illustrating the common lack of sex difference." The youngest patient at onset of neuritis was 25 years of age and the oldest was 77 with an average of 51 years. The average duration of diabetes at onset of symptoms was six years.

Rundles[2] finds in his series of 125 cases that the sex incidence was males 69 (55 per cent) and females 56 (45 per cent). More than a quarter of his patients were less than 40 years of age and eight were 20 or less. In the average patient of his series, diabetes had existed slightly over five years before the onset of neuropathy.

Case Reports

The first case is typical of moderate peripheral neuropathy with allied urinary bladder and sphincter disturbances:

E. S., No. 155747. This 48-year-old colored female was admitted to the University of Kansas Medical Center on August 25, 1944, complaining of numbness and tingling in the legs and feet, weakness in the legs on walking, and difficulty in beginning urination. The patient stated that about one year before admission she began noticing difficulty in starting urination and had some incontinence. She then developed a numbness and tingling in her legs with the sensation of pins pricking her. She also experienced considerable weakness in her legs upon walking. She often had a dull, aching pain all through her legs. This increased in severity at night. At times she felt as if she were going to fall. These symptoms continued about the same from time of onset.

Past medical history was essentially negative. Physical examination revealed a moderately obese, colored female. The pupils reacted normally to light and accomodation. The fundi showed many small, round cottonwool patches. The ears, nose, and throat were normal except for some bad teeth. There was a soft, grade II, systolic murmur in the mitral area. The abdomen was negative. The deep reflexes were diminished. There was partial anesthesia over the legs below the knees. Vibratory sense was not determined.

Laboratory examination revealed a one plus albumin and a four plus sugar in the urinalysis. Wassermann and Kahn tests were negative. Total protein in the spinal fluid was 119 mg per cent. Wassermann and colloidal gold were negative for spinal fluid.

The patient was controlled on 40 units of regular insulin every morning. The diet was determined to 140 carbohydrates, 70 protein, and 70 fats. While in the hospital the patient was given massive vitamin B and vitamin C therapy by mouth.

The patient was dismissed on September 17, 1944, with instructions to continue the above outlined

treatment. Her condition was diagnosed as diabetes mellitus with diabetic neuropathy. The prognosis was felt to be fairly good if the diabetes is closely controlled.

The next case is chosen to illustrate a long-standing case of diabetes mellitus in which the complications of diabetic neuropathy, diabetic nocturnal diarrhea, and dropsy are manifested in a quite severe form.

R. M., No. 164227, a 38-year-old white male, was admitted to the University of Kansas Medical Center on December 1, 1949. This patient was diagnosed as having diabetes mellitus 14 years prior to admission. He was regulated on regular insulin and got along fairly well until seven years before admission at which time he developed diarrhea which has persisted to the present time. He reports from three to 10 stools daily which are watery, light-colored, foul-smelling, and accompanied by flatulence and cramping. He has suffered mostly at night from this diarrhea. One year prior to admission patient developed ankle edema and albuminuria. This was controlled until a short time before admission with ammonium chloride and mercurial diuretics. Shortly before admission patient discovered that the diuretics were intensifying his diarrhea, and he refused further diuretic therapy. Upon admission patient was anorexic, vomited frequently, and had two plus pitting edema of ankles, legs, and feet.

Admission physical examination disclosed blood pressure of 180/110, above mentioned edema, and absence of sensation in lower extremities. He had burn scars on both legs due to lack of sensory guard. Deep reflexes were absent. Vibratory sense was absent.

The hospital course was stormy. It was almost impossible to regulate his insulin needs. This was thought to be due to insulin storage in the edema for certain lengths of time and then an unpredictable release of the stored insulin. He was given massive vitamin therapy and crude liver extract. One week before dismissal he developed severe pain in the left shoulder. This pain continued unabated until dismissal. He was dismissed unimproved on March 4, 1950.

Etiology

There is little agreement among workers in this field as to the etiologic factors of diabetic neuropathy. Some clinicians believe the disorder is a senile degenerative change resulting from the sclerosis of peripheral arteries. As many more rule out this theory by claiming therapeutic changes that improved the subjective symptoms and objective signs of many patients suffering from diabetic neuropathy. They point out that such an improvement would not have occurred if sclerosis were the etiologic factor since it is an irreversible condition. They further state, ". . . insulin is not a factor in the prevention, development, or cure of the neuropathy. Loss of weight seems to be important since 58 per cent (of 100 cases) of our patients with diabetic neuropathy had marked weight loss prior to or during the development of the neurologic symptoms." Rudy and his co-workers observed that all the manifestations of vitamin B deficiency in diabetics develop not only during the acute stage of the diabetes but also soon after the control of the glycosuria and hyperglycemia. They conclude that the disturbed carbohydrate metabolism in some way interferes with the vitamin metabolism and thus brings about the nutritional deficiency which is pathogenic for the development of diabetic neuropathy.

Williams[11] calls attention to the tocopherols as being possible factors in neuromuscular disturbance associated with diabetes. He emphasizes that a small but significant proportion of diabetic neuropathy patients has been benefited from moderate therapy with vitamin E.

Emerson[12] has a logical explanation for the occurence of diabetic neuropathy. He recalls that at least three of the B vitamins are as essential as insulin in the chain of glucose oxidation and that nerve tissue depends principally on the metabolism of carbohydrate for its function. The vitamin need of diabetic patients appears to vary indirectly with their insulin requirement, or, more properly, with their rate of glucose utilization.

Rundles[2] states, "Our clinical evidence indicates that peripheral nerve disease arises when these metabolic adjustments consequent to insulin deprivation may be paramount but the excessive oxidation of fat possibly leading to peripheral demyelinization as well as the protein breakdown which occurs cannot be ignored. A review of the relevant information available justifies the opinion that neither occlusive vascular disease nor a primary or conditioned vitamin B deficiency plays a definite etiologic role. From our own clinical study the conclusion is inescapable that diabetic neuropathy is not only truly 'diabetic' in etiology but results from the abnormal metabolism of chronically unregulated diabetes."

Collens et al[8] state that the neuropathies in diabetes mellitus represent a disturbance in the metabolism of the antineuritic fractions present in vitamin B complex rather than a simple nutritional deficiency of these important components.

An editorial from Lancet[13] remarks that diabetic neuropathy is not the direct result of hyperglycemia or ketosis; it may be seen in patients whose diabetes is well controlled by diet and insulin, whereas other patients who were free of neurological signs before

treatment have developed symptoms and signs shortly after treatment was initiated. Inevitably lack of vitamin B1 has been suggested as the cause; but Needles[14] and Fein et al[15] investigated the diets given to their diabetic patients and found that diabetic neuropathy could occur when the intake of vitamin B1 was well above normal requirements.

Cobb and Coggeshall[16] believe diabetes should be included with pellagra, beri beri, and cachexia as one of the deficiency and metabolic disorders capable of causing neuritis. Williams and Spies[17] suggest that vitamin B1 deficiency is the cause of diabetic neuropathy.

Marble[7] does not offer a theory as to the etiology of diabetic neuropathy, but he emphasizes the fact that the use of thiamine or vitamin B complex in extraordinarily large amounts fails to bring about any prompt or dramatic recovery. He feels that if thiamine deficiency is an important factor in diabetic neuropathy, it is dependent upon the metabolic disturbance of uncontrolled diabetes.

Root[18] believes that uncontrolled diabetes of long duration has some specific effect on nerve tissue, either by a direct metabolic influence or indirectly by means of a dietary deficiency. He admits that thiamine may play a role in diabetic neuropathy but contends that the rate of recovery after vitamin therapy is not always consistent enough to support such a belief.

Jolliffe et al,[19] in discussing the prevalence of various types of nutritional polyneuropathy in diabetic and alcoholic patients, suggested that thiamine deficiency might account wholly or in part for such disorders as bilateral symmetrical polyneuropathy, combined system disease, Wernicke's syndrome, and certain organic reaction psychoses.

Meiklejohn[20] questioned the characterization of thiamine as the so-called "anti-neuritic vitamin." He pointed out that although thiamine therapy remedies the functional metabolic disturbance of nerve tissue produced by lack of this substance, the exact relation of thiamine to the organic changes of polyneuritis is still unknown.

Nutrition Review[21] reveals that polyneuropathy can be produced in different species of animals by diets deficient in riboflavin, pyridoxin, and panthothenic acid only, and can be cured by the administration of these components of the vitamin B complex.

Street[22] found that a diet deficient in thiamine produced irreversible changes (neurologic) in dogs. He had maintained the animals on a partially thiamine-deficient diet until signs of peripheral neuritis developed. Large doses of thiamine chloride given during the following month had no therapeutic effect, and histologic examination revealed degeneration of the peripheral nerves, anterior horns and posterior columns of the spinal cord.

Swank and Bessey[23] observed in pigeons, and Leblond and Chaulin-Serviniere[24] in monkeys, that the nature and extent of neurological changes depended on the degree and duration of the vitamin deficiency. Severe or total deprivation of thiamine caused rapid prostration and death, without neurologic signs or pathologic changes in the nervous system. With partial restriction of thiamine over a considerable period of time, it was possible to produce definite signs and histologic evidence of polyneuropathy.

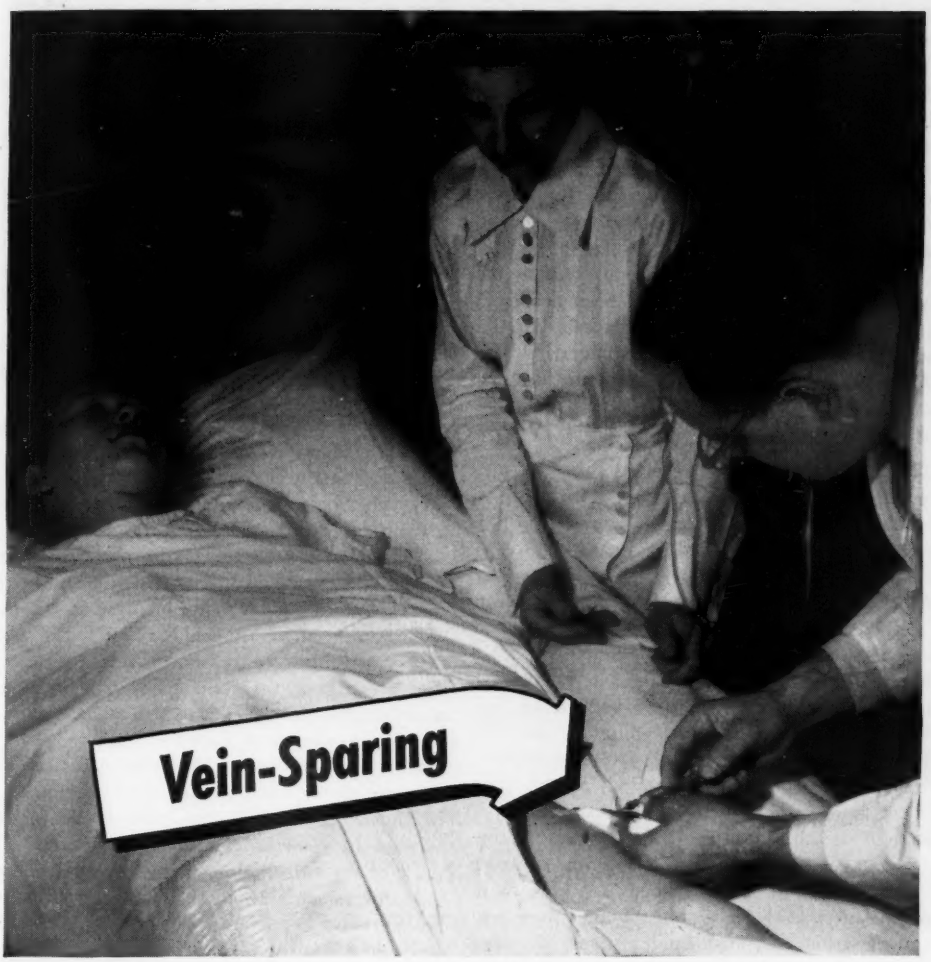
Williams et al[25] made observations in man similar to those made above in animals. They found that prolonged partial restriction of thiamine produced neurologic disturbances such as weakness and paralysis of the thigh muscles and diminished vibratory sensation. The ankle jerks and knee jerks first became hyperactive, later diminished, and finally disappeared. Early in the experiment, the subjects developed weakness, anorexia, nausea, epigastric distress, and vomiting. Later there appeared marked weight loss, giddiness, apathy, confusion, inactivity, numbness and tingling in the legs. The response of the neuropathy to thiamine therapy was extremely slow. He concluded that polyneuropathy is a manifestation of advanced rather than of early thiamine deficiency.

Rudy[26] says that neuropathy in diabetic patients is not the clear-cut syndrome that has been produced in animals and man by diets deficient in vitamins. He feels that the neuropathy is frequently diffuse and disseminated and often presents a bizarre picture. The predominant manifestations may be of cerebral origin or be related to the spinal cord, or may be the result of changes in the peripheral nerves.

Pathology

Relatively little is known about the pathology of diabetic neuropathy. This came about because, in its purest form, diabetic neuropathy occurs in individuals under the age of 50. It is not fatal and recovery usually takes place. Therefore, post-mortem study does not commonly occur.

Woltman and Wilder,[27] in a study of the degenerative or circulatory type of neuropathy, described areas of degeneration in the peripheral nerves, more marked distally and associated with thickening of the walls of the nutrient vessels. They, therefore, attributed the nerve changes to arteriosclerosis. Slight changes in the spinal cord, most marked in the posterior columns, were also noted and attributed to arteriosclerosis. However, as emphasized above, typical acute diabetic neuropathy often occurs in patients under the age of 50 years without noteworthy arteriosclerosis and with them the condition



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may be completely reversible, so the evidence is strong that this major type is not due to arteriosclerosis.

Aring[28] states that lesions may be found in the nerve trunks with interstitial reaction in the peri-and endoneurium. Changes may be found in the dorsal roots and columns and also in the ventral horn cells. Changes are occasionally more marked in the intramedullary course of the posterior root. The nerves from the lower part of the legs show greater damage than the nerves from the pelvic level. The greater the vascular disease in diabetes the greater the nerve damage, though nerves have been examined from patients who did not have diabetes but did have arteriosclerosis, and they do not show this pathological change. This is another indication that vascular disease is not the sole cause of diabetic neuropathy.

Laboratory Examination

Examination of the spinal fluid shows almost invariably an increase in the protein. Eighty-five per cent of 84 cases reported by Root and Rogers had a spinal fluid protein over 59 milligram per cent. Fifty-two per cent had values ranging between 71 and 120 milligram per cent; and 17 per cent had values between 121 and 390 milligram per cent.

Rundles examined the spinal fluid in 31 patients. Ten fluids were normal. Thirteen had excess total protein ranging from 48 to 80 milligram per cent. The remaining eight patients had severe neuropathy and spinal fluid proteins with values of 268, 364, 426, etc., milligram per cent.

Rudy[26] says that the spinal fluid protein may be elevated in patients with minimal objective evidence of neuropathy. In other diabetic patients with minimal objective evidence of neuropathy, there may be no elevation of spinal fluid protein. In other patients with signs of advanced neuropathy, however, the spinal fluid protein may also be normal or only slightly elevated.

The cellular content, pressure and dynamics are characteristically normal in diabetic neuropathy. The globulin is usually increased. The colloidal gold curve may be slightly elevated, often in the midzone, but may simulate the paretic gold curve with elevation to the left. The severity of neuritis tends to parallel the level of the spinal fluid protein, and clinical improvement is usually accompanied by a decrease in this value.

Course

Although the duration of symptoms is variable, the course of diabetic neuropathy is apt to be prolonged, ranging from a few or several weeks to a few or several years. The prognosis is good, in general, especially in the younger age groups, provided that treatment is begun before permanent nerve damage has occurred. Residual neurologic signs may persist for an indefinite period.[7]

Treatment

Aring[28] says that the longer the duration of imperfectly controlled diabetes, the more frequent is the involvement of the nervous system. However, control of the diabetes does not appreciably influence the course of the neuritis, once it has occurred. It seems hardly necessary to note that the diet should contain liberal amounts of the vitamins.

He goes on to say that the use of heat delivered by an electric pad or by warm baths, particularly at night, is the single most useful agent in the relief of pain. Liberal use of acetylsalicylic acid, occasionally bolstered with codein, is a useful adjunct. Ointments, particularly those containing cocaine, applied to the tender and painful parts, are of value.

Weakness and pain may result from the pressure of bed clothes. A cradle should be used to tent such garments over the body. If paralysis is present the limb should be supported by padded splints in a neutral position. For all forms of neuritis that cause weakness, bed exercises are necessary after the period of extreme pain has passed. Gentle passive movements of all the joints involved is a requisite to prevent contracture and fixation. The patient should perform these movements several times daily. The severity of the joint pains which result on passive movement depends somewhat on the fixation that has developed. It forms a rough index for the amount of physiotherapy that is required. Obviously no interference with the mobility of joints should be allowed to develop. Leg crossing should not be allowed in diabetics with neuritic tendencies because of the vulnerability of the peroneal nerves.

Marble maintains that unless the diabetes is brought and kept for a prolonged period under meticulous control, all other attempts at treatment will fail. A thoroughly adequate diet should be provided and protamin zinc insulin should be used. Although no dramatic benefit can be expected, large doses of vitamin B complex should be given.

Collens et al[8] recommend six capsules of vitamin B complex, 30 cc. of elixir vitamin B complex, 300 milligrams of thiamin, and 300 milligrams of niacinamide daily plus crude liver extract.

According to Rundles, administration of insulin is the most effective treatment for diabetic neuropathy.

Rudy and Epstein[6] used vitamin B therapy in addition to precise control of the diabetes in 100 cases. Complete recovery from the neuropathy was uncertain and slow but it occurred. Marked improvement was shown by 72 patients under this regime—by 37 of them in less than six months and by another 29 in six to 12 months. Some cases showed a progression of symptoms in spite of

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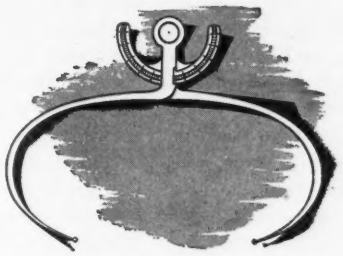

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treatment. Complete recovery with the total disappearance of the objective signs as well as of the subjective symptoms was observed in several cases. Occasionally there is a recurrence of the neuropathy.

For those who believe that arteriosclerosis is an etiologic factor, Page and Bernhard[29] write that iodine will prevent arteriosclerosis in rabbits fed cholesterol in excessive amounts. Also, according to Roffo,[30] both the eggplant and the Jerusalem artichoke possess the capacity to lower the level of cholesterol in the serum, presumably by increasing its excretion in the bile. Another point of nutritional interest is the correlation between hypoalbuminemia and diabetic retinitis. This is of particular interest in that improvement of the retinitis has been reported following administration of high protein diets.[31] Animal protein is also one of the best dietary sources of potassium and phosphorus upon which the body is dependent for the normal oxidation of carbohydrate. In treatment of diabetic coma with large amounts of glucose and insulin, the demand for phosphorus and potassium may exceed the supply and near deaths have been reported from respiratory paralysis associated with a low serum potassium level.[32]

Unusual Manifestations of Diabetic Neuropathy

1. *Neuropathic Foot:* It is believed that the bone destruction seen in neuropathic foot represents a trophic change resulting from diabetic neuropathy. No case has shown any tendency to improve, and the only treatment that has proved helpful has been the use of orthopedic appliances in an effort to relieve weight bearing and thereby help to prevent further deformity. Foster and Bassett[33] believe that pathological changes in the posterior columns of the spinal cord so disrupt the afferent impulses subserving the experience of pain, trauma of normal weight bearing, proprioception and defective temperature-regulating, hypotonic arteries and intact motor power to the joints, so that the said joints are hypermotile and predispose the skeletal system to an overreaction to trauma, with the corresponding development of a joint similar to a Charcot joint. The most striking differences between the true Charcot joint and the neuropathic foot are that Charcot joint rarely affects the foot, Charcot joint presents with acute onset of fluid in the joint whereas this does not obtain in the neuropathic foot, Charcot joint seldom forms new bone whereas this is common in the neuropathic foot, and Charcot joint commonly causes acute pain in its prodromal stage.[34]

2. *Diabetic Nocturnal Diarrhea:* Sheridan and Bailey[35] reported on 40 cases of "diarrhea of diabetes" or "diabetic nocturnal diarrhea." Characteristic of the diarrhea of these patients was its occurrence chiefly or entirely at night. There might be little or no diarrhea during the day, yet the patient would have 10 to 15 brown, watery stools during the night. It tended to occur intermittently in 85 per cent of the cases with remission lasting for several days followed by relapses. Nocturnal incontinence of feces occurred in 78 per cent. Treatment with a low-residue bland diet, sulfonamides, hydrochloric acid, vitamins, and drugs exerting a constipating effect was of little value. It was found, however, that crude liver extract given parenterally was of definite benefit in controlling diarrhea in 26 of 28 cases in which it was used. They concluded that this diarrheal syndrome probably represented a nerve disturbance of the bowel, possibly involvement of the sympathetic nervous system, on the basis of diabetic neuropathy.

Rundles[2] says that disturbed gastro-intestinal function is a common accompaniment of diabetic neuropathy and one that should be associated with autonomic nerve disease. Two of his patients with nocturnal diarrhea who died were reported pathologically to have degenerative changes in the nerve trunks of the esophageal plexus and about the celiac ganglia. He says there is no clinical evidence to suggest that neuropathy follows diarrhea in sequence, as in some of the deficiency diseases, although the presence of diarrhea and even more the occasionally associated anorexia and nausea make the diabetic status exceedingly difficult to control.

3. *Other Neuropathies:* Abnormal pupillary reaction and genito-urinary disturbances have been reported by several workers in this field. Rundles found that one-fourth of his series of 115 patients with diabetic neuropathy had genito-urinary or sphincter disturbances. An atonic bladder paralysis or so-called "cord bladder" occurred in 18 of this series. The abnormal pupils were, in most instances, miotic, reacting sluggishly to light, better on accomodation. Irregular and unequal pupils were observed. "Non-syphilitic Argyll-Robertson pupils" have been observed. Complete lack of sexual potency was recorded as a complaint in 19 patients of Rundles' series. Urinary incontinence was a complaint of 10 patients.

Summary

It seems clear that diabetic neuropathy is a generalized neurologic disturbance. Although the exact etiology is not clear, poor diabetic control seems to be an invariable factor preceding the onset of subjective symptoms. Symptoms and signs of a vitamin B complex deficiency are frequently associated with diabetic neuropathy. The vitamin deficiency is secondary and appears to be caused by the disturbed metabolism of diabetes mellitus. The treatment of choice consists of large doses of thiamine chloride in addition to precise control of the diabetes. The spinal fluid is characterized by an increase in total protein. The eventual prognosis is good, particularly

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Look in the file of clinical reports on antihistaminics and it will be apparent that one is outstanding for prolonged action. It is DI-PARALENE Hydrochloride (Chlorcyclizine Hydrochloride, Abbott), a "different" antihistaminic with a piperazine side chain rather than one of the conventional types.

Numerous clinical reports attest to the longer lasting allergy relief with DI-PARALENE. In many cases relief up to 24 hours can be obtained from a single dose. Initially, DI-PARALENE should be administered in 50-mg. doses three times a day for the average adult, but in the majority of cases this dosage can later be reduced to one or two doses a day. One 50-mg. tablet at bedtime often provides symptomatic relief through the night. Frequently, no additional dosage is required until the next bedtime. Undesirable side-effects are comparatively few and mild.

This season try longer-acting DI-PARALENE in your allergy cases. Available at prescription pharmacies in 50-mg. and 25-mg. tablets in bottles of 100 and 500. **Abbott**

Specify

Abbott's new long-acting antihistaminic

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in younger patients. Unusual manifestations of diabetic neuropathy include "neuropathic foot," "diabetic nocturnal diarrhea," and bladder paralysis.

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BLUE SHIELD

Benefit Increase August 1

Additional benefits and a slight increase in Blue Shield dues will go into effect for a majority of Blue Shield members August 1. The increases for quarterly, semi-annual and annual paying members will become effective on their first payment dates after August 1. This means that a few members will continue on the old plan at the old rates until July 1, 1952.

Eight Benefit Increases

Benefit increases are summarized below:

1. Payment for medical (non-surgical) care in hospital increased to the following basis:

First hospital day	None
2nd, 3rd and 4th hospital day	$5.00 per day
Next 27 days	$3.00 per day
Next 60 days	$2.00 per day

2. Accident x-ray allowance increased from $15 maximum to $25 per year.

3. Benefits now available for bronchoscopy, esophagoscopy, cystoscopy and gastroscopy.

4. Surgical allowances increased to $200 on the most complicated procedures such as total cystectomy, craniotomy, pneumonectomy, spinal fusion, etc.

5. Emergency first aid allowance for sprains, minor burns, cuts, etc. (Such minor treatments were heretofore excluded).

6. Payments reinstated for removal of minor skin tumors.

7. Anesthesia allowances increased for the most complicated surgical procedures.

8. Allowances for a few surgical procedures were adjusted upward to bring payment for them into line with other procedures.

Higher Income Levels

In response to the rising cost of living and higher incomes generally, Blue Shield will increase service income limits to $2,000 for single members and $3,000 for family members. This means that members earning below these amounts will be entitled to services covered by Blue Shield without additional charge by the participating physician.

Full Information For Doctors

A revised participating physicians' manual containing full details on the new program will be mailed prior to August 1.

Members Well Informed

Information on the need to change both Blue Cross and Blue Shield contracts and dues has been going out to members since March. Rising hospital costs plus increased use of service are the main reasons back of the substantial Blue Cross raise in dues. The service benefit feature of Blue Cross means that members have already been receiving more and more benefits as hospital costs increase. For example, as the use and cost of drugs go up, Blue Cross coverage goes up accordingly. This kind of protection is found only in a plan which does not have dollar limits on costly hospital extras. The slight increase in Blue Shield is due entirely to the additional benefits.

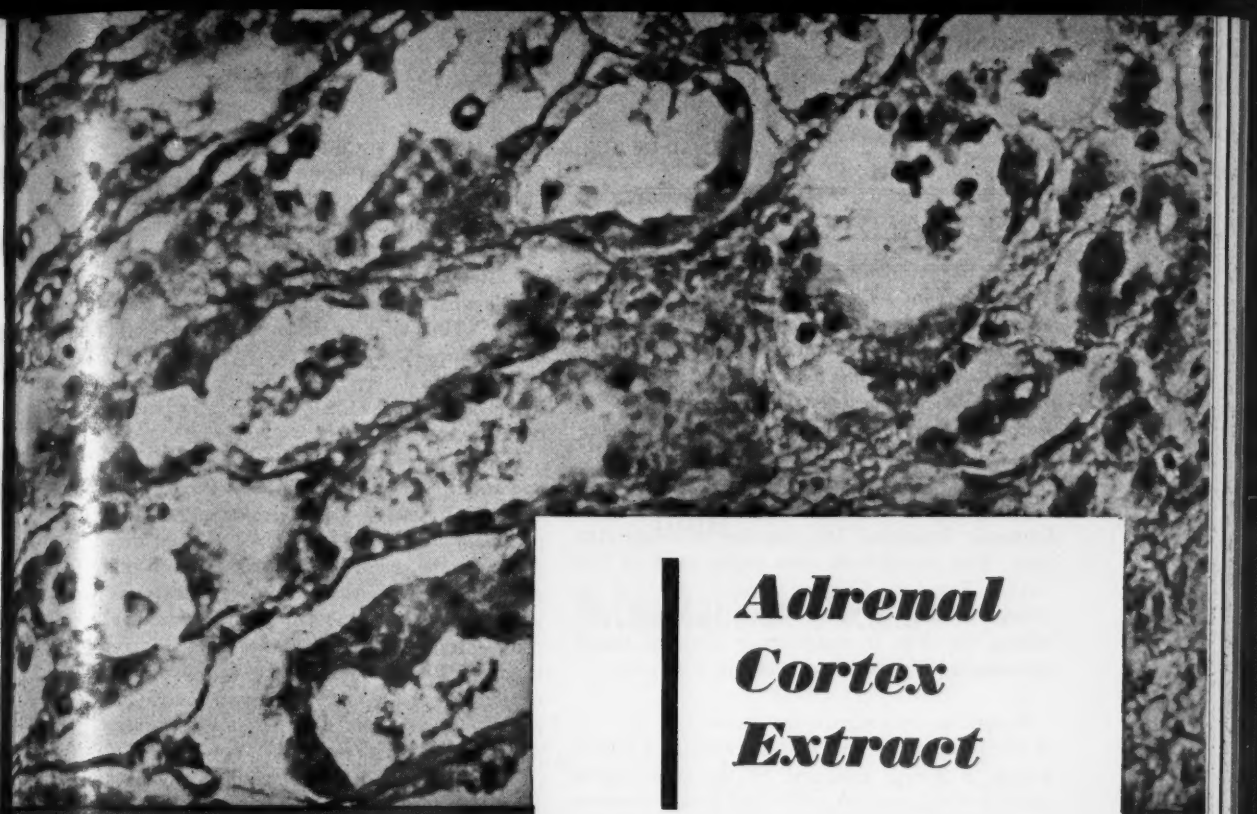
New Dues

Blue Cross and Blue Shield monthly dues will be as follows:

Blue Cross	Single	Family
Community	$2.15	$4.30
Group	$1.80	$3.60
Blue Shield		
Community	$1.65	$3.30
Group	$1.35	$2.70

Atomic Energy Commission Award

Dr. Robert E. Stowell of the University of Kansas Medical Center was recently awarded a grant by the Atomic Energy Commission for cytochemical, microchemical and biophysical studies of tumors and effects of radiation upon cells. The award covers the period to June 30, 1952.



...unter cortical depletion

Adrenal Cortex Extract

Protection against failing cortical activity of the adrenal gland in situations of acute stress is provided with biologically standardized Adrenal Cortex Extract. This preparation supplies all corticoids known to be essential to life and instrumental in recovery from surgery, severe accidents, extreme toxicity, severe infections, extensive burns. Persistent excessive demand in stress situations produces diminishing adrenal cortex response which may be offset with Adrenal Cortex Extract, Sterile Solution, for administration by the subcutaneous, intramuscular, or intravenous routes. Literature on Upjohn adrenocortical preparations available on request.

Supplied in 10 cc. and 50 cc. vials.

Each cc. of Upjohn Adrenal Cortex Extract contains the biological activity equivalent to 0.1 mg. of 17-hydroxycorticosterone, as standardized by the Rat Liver-Glycogen Deposition test. Alcohol 10%.

Upjohn

...dealers ... prolonged ... cort... Desoxy... for ...le

SOCIALIZED MEDICINE

Editor's Note. This is the 20th of a series of articles dealing with federal compulsory health insurance. These are designed to give the physician factual information and reliable data which may be used in the preparation of articles or speeches on this important subject. Additional material will be presented in subsequent issues.

Legalized Immorality

The Journal is indebted to the Foundation for Economic Education, Inc., for the following clipping. This is extracted from pages 36-39 of *The Key to Peace,* by Clarence Manion, dean of the College of Law of Notre Dame University. We believe this to be an exceptionally clear and simple statement of a phase of socialism in government.

* * *

It must be remembered that ninety-five per cent of the peace, order and welfare existing in human society is always produced by the conscientious practice of man-to-man justice and person-to-person charity. When any part of this important domain of personal virtue is transferred to government, that part is automatically released from the restraints of morality and put into the area of conscience-less coercion. The field of personal responsibility is thus reduced at the same time and to the same extent that the boundaries of irresponsibility are enlarged.

Government cannot manage these fields of human welfare with the justice, economy and effectiveness that is possible when these same fields are the direct responsibility of morally sensitive human beings. This loss of justice, economy and effectiveness is increased in the proportion that such governmental management is centralized . . .

Government cannot make men good; neither can it make them prosperous and happy. The evils in society are directly traceable to the vices of individual human beings. At its best government may simply attack the secondary manifestations of these vices. Their primary manifestations are found in the pride, covetousness, lust, envy, sloth and plain incompetency of individual people. When government goes far beyond this simple duty and deploys its forces along a broad complicated front, under a unified command, it invariably propagates the very evils that it is designed to reduce.

In the sweet name of "human welfare" such a government begins to do things that would be gravely offensive if done by individual citizens. The government is urged to follow this course by people who consciously or subconsciously seek an impersonal outlet for the "primaries" of human weakness. An outlet in other words which will enable them to escape the moral responsibility that would be involved in their personal commission of these sins. As a convenience to this popular attitude we are assured that "government should do for the people what the people are unable to do for themselves." This is an extremely dangerous definition of the purpose of government. It is radically different from the purpose stated in the Declaration of Independence; nevertheless it is now widely accepted as correct.

Here is one example of centralized governmental operation: Paul wants some of Peter's property. For moral as well as legal reasons, Paul is unable personally to accomplish this desire. Paul therefore persuades the government to tax Peter in order to provide funds with which the government pays Paul a "subsidy." Paul now has what he wanted. His conscience is clear and he has proceeded "according to law." Who could ask for more?—why, Paul, of course, and at the very next opportunity. There is nothing to stop him now *except the eventual exhaustion of Peter's resources.*

The fact that there are millions of Pauls and Peters involved in such transactions does not change their essential and common characteristic. The Pauls have simply engaged the government "to do for them (the people) that which they are unable to do for themselves." Had the Pauls done this individually and directly without the help of the government, each of them would have been subject to fine and imprisonment. Furthermore, ninety-five per cent of the Pauls would have refused to do this job because the moral conscience of each Paul would have hurt him if he did. However, where government does it for them, there is no prosecution and no pain in anybody's conscience. This encourages the unfortunate impression that by using the ballot instead of a blackjack we may take whatever we please to take from our neighbor's store of rights and immunities.

COUNTY SOCIETIES

Dr. B. P. Meeker was elected president of the Sedgwick County Society at a meeting held in Wichita on May 8. Other officers chosen are: vice president, Dr. L. K. Nix; secretary, Dr. W. H. Fritzemeier; treasurer, Dr. E. S. Brinton; censor, Dr. George F. Gsell; members of the board of directors for a three-year term, Dr. J. B. Fisher, Dr. R. H. Maxwell, and Dr. L. P. Warren. The officers will be installed on January 8, 1952.

* * *

Dr. G. M. Tice, radiologist at the University of Kansas Medical Center, was guest speaker at a meeting of the Southeast Kansas Medical Society held in Iola, June 13.

For **HIGH** *Pollen Levels—*

HIGH

Antihistaminic Potency

Neo-Antergan is characterized by high antihistaminic potency—and a high index of safety. It affords prompt, safe, symptomatic relief to the allergic patient during distressing periods of high pollen levels.

Neo-Antergan is *available on prescription only*, and is advertised exclusively to the medical profession.

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MALEATE

(Brand of Pyrilamine Maleate)
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COUNCIL ACCEPTED

MERCK & CO., INC.
Manufacturing Chemists
RAHWAY, NEW JERSEY

ACTIVITIES OF MEMBERS

Dr. Ernest C. Brandsted is now engaged in the practice of obstetrics and gynecology in association with Dr. Weir Pierson in McPherson. Last month he completed a three-year residency in that specialty, two years at Northwestern University, the Cook County Hospital and the Swedish Covenant Hospital in Chicago and one year at the University of Illinois Educational and Research Hospital.

* * *

Dr. Henry S. Blake, Topeka, was named president of the Topeka Council of Social Agencies at an election held last month.

* * *

Dr. J. S. Menaker, Wichita, spoke on "Physical and Mental Health" at a recent meeting of the Kansas State Dental Assistants' Association.

* * *

Capt. E. B. Struxness, formerly of Sterling, who has been stationed in San Antonio, Texas, has been assigned to the air material command of the Far East Air Force in Japan.

* * *

Dr. H. P. Fink, Bucklin, spoke on socialized medicine before a women's club meeting in Bucklin last month.

* * *

Dr. Edwin R. Maier, of the Arkansas City Medical and Surgical Clinic, reported for active duty as a captain in the medical department of the air force at Tinker Field in Oklahoma City on June 30.

* * *

Dr. J. L. Lattimore, Topeka, was speaker at dedication ceremonies at the Smith County Memorial Hospital at Smith Center on June 3.

* * *

Dr. F. F. Lemon, who has been practicing in Douglass since 1916, observed his 50th anniversary in the practice of medicine recently.

* * *

The Meek-Stensaas Clinic, Arkansas City, announces that Dr. Newton C. Smith is now a member of the staff. He was recently discharged from active duty with the Navy.

* * *

Dr. Howard Snyder, Winfield, spoke on cancer control as part of the program for Women's Week at Kansas State College, Manhattan, early in June.

* * *

Dr. H. W. Lane has completed a course of study at Johns Hopkins Hospital in Baltimore and has returned to the Butler-Greenwood-El Dorado health unit, with headquarters in El Dorado.

* * *

Dr. H. L. Bogan, Baxter Springs, announces that Dr. Dale Alquist is now associated with him in practice. Dr. Alquist has recently been a member of the staff of the Wadsworth Veterans Hospital.

* * *

Dr. V. Dean Schwartz, Wichita, was called to active service with the Army recently and reported at San Antonio, Texas, on June 5.

* * *

Dr. J. T. Swanson, Independence, became a fellow of the American College of Radiology at a convocation of the college in Atlantic City last month.

* * *

Dr. A. B. McConnell, Burlington, gave a talk on health before the Rotary Club in that city recently.

* * *

Dr. J. E. Hodgson, Downs, is now beginning his 53rd year in the practice of medicine.

* * *

Dr. William H. Wood, formerly on the staff at the Topeka State Hospital, has been named acting superintendent of the State Training School at Winfield, to serve until a permanent appointment is made.

* * *

Dr. E. V. Thiehoff, chairman of the Department of Public Health and Preventive Medicine at the University of Kansas School of Medicine, has been appointed to the editorial staff of Excerpta Medica. His work will be on the section on medical microbiology and hygiene.

* * *

Dr. Bert Stofer, Wichita, was guest speaker at a meeting of the Sedgwick County Medical Assistants' Society held in Wichita, June 20.

* * *

Dr. D. M. Treger, who has been practicing in Medicine Lodge since 1949, has begun a three-year residency in general surgery at Sacred Heart Hospital, Allentown, Pennsylvania.

* * *

Dr. Paul W. Schafer, professor of surgery at the University of Kansas Medical Center, was one of the guest speakers at the annual meeting of the Minnesota State Medical Association in May. He later addressed the Ogden Surgical Society, Ogden, Utah.

* * *

Dr. Clarence Gripkey, Kansas City, spoke on "Progress in Treatment of Polio" at a meeting of 35 eastern Kansas chapters of the National Foundation for Infantile Paralysis, held in Kansas City on June 14.

* * *

Dr. Franklin D. Murphy, dean of the University of Kansas School of Medicine, was elected a member of the Council on Medical Education and Hospitals of the American Medical Association by the House of Delegates of the A.M.A. at Atlantic City, June 14.

MEAT in the Dietary Treatment of Ulcerative Colitis...

Of utmost importance in treating ulcerative colitis is the support of the nutritional state of the patient with a diet providing generous amounts of protein, vitamins, minerals and calories but giving a minimum of intestinal residue.[1,2] Studies have shown that the most urgent nutritional need is for protein.[3] Other investigations have disclosed that patients with colitis display abnormally low serum levels for almost every vitamin.[4] Since most of these patients have anorexia, tempting food is essential for stimulating the appetite.

In particular, meat offers distinct advantages in maintaining the nutritional status and vigor of the colitis patient. Meat furnishes an abundance of protein, B complex vitamins and iron. Its protein contains all the indispensable amino acids in biologic proportions for growth and repair of tissues. Its B vitamins include thiamine, riboflavin, pyridoxine, niacin, and the recently discovered B_{12}. Being almost completely digestible, meat yields negligible intestinal residues which are non-irritating and non-stimulating to the intestinal musculature.

Another feature of meat in the diet of the patient with ulcerative colitis is its appetite-stimulating value for overcoming anorexia and promoting the digestive processes. In a widely used low-residue colitis diet,[2] providing from 60 to 80 Gm. of protein, 120 Gm. of meat and 10 Gm. of crisp bacon are included.

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The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

American Meat Institute

Main Office, Chicago... Members Throughout the United States

Dr. Karl Menninger, Topeka, was guest speaker at a recent meeting of the Topeka Real Estate Board.

* * *

Dr. C. Henry Murphy has returned to the city-county health department in Wichita after a year's absence during which he took postgraduate work at Harvard University and earned a master's degree in public health.

* * *

Dr. Tom R. Hamilton, professor of microbiology and pathology at the University of Kansas School of Medicine, presented a paper, "Carditis and Pulmonary Arteritis in Monkeys," at a recent meeting of the American Society for Experimental Pathology in Cleveland.

* * *

Dr. E. E. Brooks, who has practiced at Burden 43 years, was honored by the community at a "Dr. Brooks Day" on June 24. The main address was given by Governor Edward F. Arn.

* * *

Dr. William P. Williamson was recently named chief of the section of neurosurgery at the University of Kansas School of Medicine, succeeding Dr. Frank R. Teachenor. Dr. Teachenor will continue teaching and clinical research at the university.

* * *

Dr. Paul L. Beiderwell, Belleville, was the subject of a feature story in the Belleville Telescope on June 21.

* * *

Dr. G. M. Edmonds, Horton, announces that Dr. Charles N. Harvath is now a member of the staff of the Horton Clinic. Dr. Harvath, a graduate of Northwestern University Medical School in 1944, served several years in the Army and has been practicing in Phoenix, Arizona, during the past three years.

* * *

Dr. Robert E. Stowell became chairman of the department of pathology and oncology at the University of Kansas School of Medicine on July 1, succeeding Dr Harry R. Wahl, who will continue teaching as professor of pathology.

* * *

Dr. Dwight Lawson, Topeka, was recently elected to the board of directors of the Shawnee Guidance Center.

* * *

The Dodge City Medical Center announces that Dr. Paul Hornung became a member of its staff on July 1, specializing in obstetrics and surgery. He is a graduate of the University of Kansas School of Medicine.

* * *

A feature story in the Minneapolis Messenger on June 21 paid tribute to Dr. E. J. Haerle, who has practiced in Minneapolis for 33 years.

THE KANSAS PRESS LOOKS AT MEDICINE

Many Are Opposed

Some of the proponents of national compulsory health insurance have pooh-poohed the idea that this grandiose scheme would inevitably lead to socialized medicine. It would do nothing of the sort, they argue—it would just make it easier for people to meet their medical bills, by taxing them in advance.

Well, a great many million Americans seem to think otherwise. For example, an extraordinarily large number of national organizations have gone on record against mixing government and the practice of the healing arts. These include, according to a recent report, the American Legion, the American Bar Association, the American Farm Bureau federation, the conference of small business organizations, the Veterans of Foreign Wars, the general federation of women's clubs and, literally, about 10,000 other groups.

What is the cause of all this opposition to compulsory health insurance? Primarily, it is based on the fact that the proposed law would control patients, physicians and nurses through government administrators and that it would control the money and determine how and in what amounts it would be used. As anyone with even a sketchy knowledge of government operation knows, when bureaucrats are given vast powers, along with authority over purse strings, socialism isn't far off.

In every nation which has tried government-controlled medicine, certain results have followed. The quality of care has gone down, there has been a sharp decline in medical education and medical research—and the total cost, as measured in the tax bills, has soared. Can anyone honestly believe it will work differently in this country?—*E. T. L. in Emporia Gazette, May 12, 1951.*

* * *

Medical Lobby Buys "Canned Editorial"

A fortnight ago an editorial in LABOR told how a long-established propaganda agency in Portland, Ore.—E. Hofer and Sons—has been serving as a "pipe line" for the Power Trust's viewpoint.

This week, the Committee for the Nation's Health revealed that the American Medical Association is another of the country's major lobbies financing the Hofer propaganda.

An analysis of the A.M.A.'s own reports of lobby expenditures shows, the committee said, that the "Doctors' Trust" paid $14,400 in 1950 to E. Hofer & Sons "to send free 'canned' editorials to small

predictable control of hay fever

Chlor-*Trimeton* Maleate, milligram for milligram the most potent antihistamine available, allows the physician to predict a definitive and favorable result in symptomatic control of hay fever. Often successful when others fail, and producing few and minimal side effects, Chlor-*Trimeton* Maleate is a drug of choice for antihistamine therapy.

Chlor-Trimeton

SCHERING

hlor-*Trimeton**

maleate tablets*

(brand of chlorprophenpyridamine maleate)

Chlor-*Trimeton* Maleate is available in 4 mg. tablets.

*T.M.

Schering CORPORATION • BLOOMFIELD, N. J.

daily papers and weeklies, propagandizing against the President's national health insurance program." —*Kansas City Labor Bulletin.*

* * *

Tobacco Vs. Medical Care

The average American family spends 15 per cent of its annual income on liquor, recreation and tobacco. This is a big slice of the family budget but so far no one has come up with a scheme for the Federal government to provide "free" excursion trips for everybody to their favorite bar and tobacconist's.

There is much talk of the heavy burden of medical expense to the average family. Yet only four per cent of the average family income goes to pay doctor bills. Most American families have the resources to pay for adequate medical care if they would give it the priority it deserves.

We don't want or need compulsory health insurance. It would result in a tragic deterioration of the present high standards of our medical profession. Its cost to the nation both in dollars and personal liberty would be intolerable. Under Great Britain's National Health Service some doctors have as many as four thousand patients on their lists and often see as many as twenty patients an hour—one every three minutes. This inferior assembly line service costs the English people twice what was budgeted for it in its first year of operation. Some 400,000 additional employes—clerks, administrators, bookkeepers, and tax-collectors siphon off millions of dollars of the medical funds before they can be used to provide any medical care for the people.

In the United States voluntary health insurance plans will soon protect 75 per cent of our population. This is the irrefutable answer to the wasteful and inefficient centralized system of compulsion now proposed—a system which would be detrimental to medical science and the health of the people, and which would rob both doctor and patient of their individual freedom.—*Delphos Republican, May 31, 1951.*

BOOK REVIEWS

A Textbook of X-ray Diagnosis by British Authors in Four Volumes, Volume 1, Head and Neck. Second edition. Edited by S. Cochrane Shanks and Peter Kerley. Published by W. B. Saunders Company, Philadelphia. 343 pages, 439 illustrations. Price $12.

This is one volume of a four volume set of books on x-ray diagnosis by British authors. The type, format and composition of this volume match other volumes previously reviewed. Material covered is inclusive and presentation is concise. The volume is a worthwhile member of the set of four books. —*H.H.D.*

Textbook of Medicine. Edited by Russell L. Cecil and Robert F. Loeb. Published by W. B. Saunders Company, Philadelphia. 1627 pages, 40 tables, 204 figures. Price $12.

The editorial staff has been enlarged to include Dr. Robert F. Loeb as co-editor and Doctors Alexander Gutman, Walsh McDermott and Harold Wolff as associate editors.

The general outline of the previous issue has been retained. In order to keep abreast of the current theories, discoveries and concepts, 20 new subjects have been added. Material has been transposed and rewritten to stress physiological, biochemical and psychological aspects. The new subjects include beryllium poisoning, Q fever and an introduction to collagen diseases.

The discussion on infection monomycleosis has been transferred from the section on Diseases of Unknown Etiology to that on Viral Diseases. Erythemas have been moved to Diseases of Allergy. Disseminated lupus erythematosus, dermatomyositis, periarteritis nodosa and scleroderma have been grouped under Collagen Diseases. Rheumatic fever and rheumatoid arthritis, although described elsewhere, are listed under Collagen Diseases.

Fields of internal medicine receiving the greatest impetus in the past several years required the most revision. Endocrinology with emphasis on the pituitary and adrenal glands leads the parade. Cortisone and ACTH therapy, indications, effects, side effects and dosages are discussed under the treatment of rheumatoid arthritis.

The authors include the use of protein-bound iodine as a diagnostic procedure, radioactive iodine for the treatment of hyperthyroidism and streptomycin and PAS in the treatment of tuberculosis.

In addition the book is more compact by 136 pages without sacrifice of important material.—*H.W.V.*

* * *

Principles and Practice of Obstetrics. Tenth edition. By J. P. Greenhill. Published by W. B. Saunders Company, Philadelphia. 1020 pages, 864 figures, 194 in color. Price $12.

This is a revised and up-to-date edition of one of the standard textbooks of obstetrics with excellent illustrations.—*R.L.N.*

* * *

Proceedings of the Second Clinical ACTH Conference. Volume 1, Research, 531 pages, 276 figures, 52 tables. Volume II, Therapeutics, 716 pages, 311 figures, 81 tables. Edited by John R. Mote. Published by the Blakiston Company, Philadelphia. Price $8.50 each volume.

These volumes consist of 102 papers presented at the Armour Second Clinical ACTH Conference at Chicago, December 8 and 9, 1950. They repre-

hay fever . . .

Neo-Synephrine acts quickly to relieve the distress of hay fever, shrinks the engorged mucous membranes, checks hypersecretion, permits free breathing and promotes comfort.

It is notable for

- excellent tolerance
- relative freedom from compensatory congestion
- lack of appreciable interference with ciliary action.

Its effectiveness is undiminished by repeated use—insuring topical relief throughout the hay fever season.

NASAL USE	OPHTHALMIC USE
¼% solution (plain and aromatic), 1 oz. bottles; 1% solution, 1 oz. bottles; ½% water soluble jelly, ⅝ oz. tubes.	⅛% low surface tension, aqueous solution, isotonic with tears, ½ oz. bottles.

Neo-Synephrine®
HYDROCHLORIDE

Prompt and Prolonged HAY FEVER RELIEF

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sent essentially the year's contribution in fundamental research and experience in therapy with ACTH and adrenal corticoids.

The authors of these papers compose the leading contributors to this new and dramatic field of medicine. A wide range of diseases demonstrating treatment response is discussed, such as arthritis, myasthenia gravis, multiple sclerosis, nephrotic syndrome, alcoholism, anemias, malignancies, burns, tuberculosis, typhoid fever, bronchial asthma, poisonous bites, ulcerative colitis, skin diseases, collagen diseases and eye diseases. And a surprisingly large number of these is reported as showing favorable response to therapy.

One of the most valuable features of these reports is the discussion following each paper—often by a "rival" investigator or therapist. Liberal pertinent bibliographic references are listed.

Since ACTH and the adrenal corticoids are more available today and at lower costs, more physicians will want to try these new medications. Nowhere could one find better scientific and responsible foundation for their usage than in these two very valuable volumes. Here we find uncolored observations and unbiased opinions. These contributions present a complete survey of this most promising addition to therapeutics, all sufficiently authenticated to warrant extensive use of ACTH and the adrenal corticoids clinically.—*E.H.H.*

ABSTRACTS FROM CURRENT LITERATURE

Chemotherapy of Tuberculosis

The Chemotherapy of Tuberculosis. By Robert G. Bloch and Kirsten Vennesland, Med. Clin. N.A., 35:1, 153-167, Jan., 1951.

Chemotherapy in tuberculosis dates back many years. An inorganic gold compound, sanocrysin, was introduced in 1924, but was largely discontinued because of toxicity and ineffectiveness. Various sulfonamide compounds were tried with doubtful results.

Streptomycin acts in an unknown fashion to produce bacterostatic rather than bactericidal effects on the tubercle bacilli. Careful observation of large series of patients is essential to accurately evaluate the effects of any drug in tuberculosis, and some original reports on streptomycin are undoubtedly exaggerated.

Streptomycin therapy has been most impressive in fresh tuberculous disseminations through the blood stream, especially in generalized miliary tuberculosis. However, only about 20 per cent of treated patients have survived sufficiently long to hope for permanent cure, while in the majority the result has been conversion of an acute infection into a chronic form. When meningitis is associated, results are even less satisfactory. Here intrathecal injections are recommended, and may result in internal hydrocephalus from fibrinous exudate at the base of the brain.

Localized extrapulmonary tuberculosis, such as tuberculous osteomyelitis and genitourinary tuberculosis, usually responds well. Tuberculous sinuses of the soft tissues respond especially well.

The intracanalicular forms of tuberculosis, comprising essentially lesions of the larynx and bronchi, seem to respond readily. Good results have been reported in tuberculous enteritis. Appearance of these infections means a break-down in the patient's immune resistance, and the important thing is to focus on the source of the flow of bacilli which produced these infections; namely, the cavity in the lung.

Streptomycin, and all other chemotherapeutic agents, are effective only against the comparatively new exudative lesion; it has little or no effect on the old walled-off fibrotic process. Initial treatment in most cases should still be observation at bed rest during which initial reactions can be studied. Chemotherapy can later be fitted into the therapeutic program when indicated.

Streptomycin resistance is a stumbling block in the use of this drug. Tucker showed that 35 per cent of specimens examined after 42 days of therapy were resistant, 50 per cent at the end of 60 days, and 75 per cent at the end of 120 days.

Toxic reactions to streptomycin include pyrexia, vestibular disturbance, loss of hearing, dermatitis, and occasional renal dysfunction. Dosage is an important factor. Initially a daily dose of 2.0 gms. was given for 120 days. In most institutions, this has been reduced to 1.0 gms. for 42 to 60 days. Dihydrostreptomycin shows only a limited degree of lesser toxicity than streptomycin.

This author is of the opinion that minimal fresh exudative noncavitary tuberculosis and even some more extensive involvements need not be attacked by drug therapy at an early date and possibly not at all. The ideal indication for the drug is postoperatively when collapse therapy is carried out by surgical means; it may then prevent fatal complications from introduction of large amounts of infected material into the bronchial system by the collapse process. Because of the known development of streptomycin resistance, the use of the drug must be fitted to the optimal time in the individual case.

Para-aminosalicylic acid was introduced as a therapeutic agent by Lehman. Dose is 10 to 14 gms. daily. Resistant organisms do not appear with nearly the rapidity reported for streptomycin. Animal experiments indicate a moderate to good suppressive effect against experimental disease.

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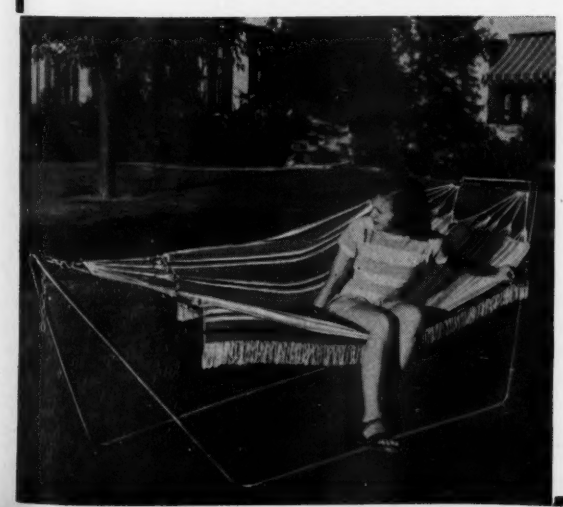

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Combined therapy by streptomycin and para-aminosalicylic acid seems more effective than either alone, and the use of both seems to delay development of resistance to streptomycin.

Tuberculostatic action of the thiosemicarbazones, especially Tbl/698, was reported in 1946. Enthusiastic reports have emanated from Germany, but remain to be confirmed in this country and studies are proceeding with caution because of reported high toxicity.—*E.J.R.*

* * *

Breast Feeding and Facial Development

The Influence of Breast Feeding on Facial Development. By F. M. Pottenger and Bernard Korhn, Arch. Ped., 67:10, 454-461, Oct. 1950.

1. Development of the zygomatic bones is important to the face for esthetic, protective and functional reasons.

2. Development of the malar prominences of the zygomatic bones was used as an index to facial development.

3. It was found that breast feeding improved the growth of the malar process.

4. Malar processes grew until age 25, at least. The people who were breast fed got off to a head start, and the others never caught up with them.

5. It is advisable to get all mothers into a good state of nutrition and to have them nurse their infants.

6. A large malar prominence is of value, not only for esthetic reasons and because it protects the eye, but also because it is the foundation of a powerful bite.

7. Cases 25 years or over when breast fed in infancy present 70 per cent with larger bimalar measurement, while 27 per cent present the same findings in the bottle fed group.—*D.R.D.*

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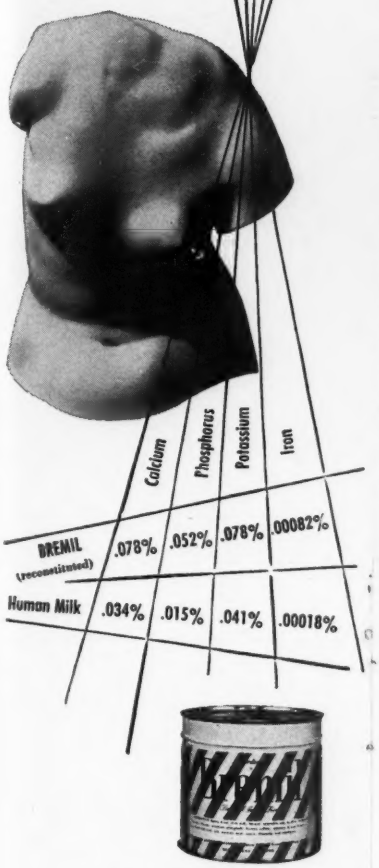

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